S. HRG. 109–1025

GREAT LAKES REGIONAL COLLABORATION'S STRATEGY TO RESTORE AND PROTECT THE GREAT LAKES

HEARING

BEFORE THE

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS UNITED STATES SENATE

ONE HUNDRED NINTH CONGRESS

SECOND SESSION

MARCH 16, 2006

Printed for the use of the Committee on Environment and Public Works

Available via the World Wide Web: http://www.access.gpo.gov/congress.senate

U.S. GOVERNMENT PRINTING OFFICE

42–274 PDF WASHINGTON : 2008

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ONE HUNDRED NINTH CONGRESS
SECOND SESSION

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GREAT LAKES REGIONAL COLLABORATION'S STRATEGY TO RESTORE AND PROTECT THE GREAT LAKES

THURSDAY, MARCH 16, 2006

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
Washington, DC.

The committee met, pursuant to notice, at 10 o'clock a.m. in room 628, Senate Dirksen Building, Hon. James M. Inhofe (chairman of the committee) presiding.

Present: Senators Inhofe, Voinovich, Thune, Jeffords, Carper, Clinton, and Obama.

Senator INHOFE. I would like to ask those of you standing in the hallway to come on in, we want to start on time.

There are votes that are taking place. Senator Voinovich will be chairing this meeting as soon as I have a brief opening statement. We are going to go ahead and start a couple of minutes early because of that, besides that, I think everyone is here anyway.

OPENING STATEMENT OF HON. JAMES M. INHOFE, U.S. SENATOR FROM THE STATE OF OKLAHOMA

First of all, let me just say, Senator Voinovich requested this full committee hearing to examine the Great Lakes Regional Collaboration Strategy and I will be turning the chair over to him as soon as I finish my opening remarks.

While I appreciate the work that went into the crafting of the Strategy and understand the importance of the Great Lakes to the region and the Nation, I have some concerns about the administration of programs in the region as well as the budget impacts of the Strategy's funding recommendations. As noted by the Strategy and GAO, there is not enough data or monitoring on the Great Lakes.

I commend the Coalition that drafted the Strategy for acknowledging the data problems and for recommending several approach for addressing them. However, the Strategy does not outline a priority system for when the various recommendations, including those to address the lack of data, should be implemented. This is a critical piece that is missing.

The Strategy calls for an infusion of nearly $20 billion over the next 5 years. In most cases the Strategy does not identify the source of funds but much of it appears to be designated as Federal dollars. In its report to the President, the Great Lakes Interagency Task Force noted that in fiscal year 2004, the Federal Government alone spent over $523.9 million on Great Lakes Basin restoration

projects and over the course of the next 10 years, anticipates spending $5 billion. We need to take a very close look at the 200 programs currently operating in the area and the $523.9 million we are currently providing to the region.

Is there overlap and redundancy? Can some of the funds be used to meet higher priority goals within the Strategy? These are questions that must be answered before we can consider adding to the Federal contribution.

Included in the $20 billion request is $7.5 billion in Federal grants to assist the Great Lakes States with meeting their water infrastructure needs. However, I must question how we can provide $7.5 billion per year to the Great Lakes Basin in grants, when we cannot even fund the National Clean Water Loan Program at $1 billion per year.

The lack of data and the lack of funding are nationwide problems and are not limited to just the Great Lakes Basin. Therefore, any effort to address them must be part of a nationwide approach that will assist all communities, not just those in the Basin. Particularly in these times of limited Federal resources, we must look at the requests for these regional priorities in the context of their current funding and the funding available for similar problems throughout the Nation. We must also ensure that money is being spent wisely and efficiently.

Senator Jeffords, I would recognize you for a brief opening statement, and at this point, I will turn the chairing of this committee over to Senator Voinovich.

[The prepared statement of Senator Inhofe follows:]

STATEMENT OF HON. JAMES M. INHOFE, U.S. SENATOR FROM THE STATE OF OKLAHOMA

Today we have a very distinguished group of witnesses to discuss a topic of great importance to many members of this committee, how to restore the Great Lakes. My colleague Senator Voinovich requested this full committee hearing to examine the Great Lakes Regional Collaboration Strategy and I will be turning the Chair over to him after I conclude my opening remarks.

The Great Lakes Strategy outlines goals and milestones that must be achieved in order to fully restore the Great Lakes. It is a collaboration of Federal, State and local stakeholders who have all come together behind these goals. They are to be commended for this effort. While I appreciate the work that went into the crafting of the Strategy and understand the importance of the Great Lakes to the region and the Nation, I have some concerns about the administration of programs in the region as well as the budget impacts of the Strategy's funding recommendations.

In 2003, the Government Accountability Office (GAO) released a report that identified several concerns with the restoration effort in the Great Lakes. The GAO found that there are 148 Federal and 51 State programs funding environmental restoration in the Great Lakes basin with 33 Great Lakes-specific programs. While the EPA administers most of the Federal dollars, the GAO found that there was not one organization in charge of coordinating the overall effort. According to GAO, the EPA's Great Lakes Program Office had been charged with coordinating the restoration effort in the 1987 amendments to the Clean Water Act but had not done so. The GAO also cited the need for one decisionmaking body to prioritize funding and restoration projects.

In 2004 the President signed an Executive order establishing the Great Lakes Interagency Task Force. The Task Force was charged with coordinating the Federal agencies with a presence in the Basin. The Executive order also established a Working Group that will determine how to implement the recommendations of the Task Force. The EPA's Great Lakes program office will report to both the Task Force and the Working Group. However, as noted in a September 2004 GAO report, "both the Great Lakes National Program Office and the newly created interagency task force

have coordination roles raising uncertainty as to how leadership and coordination efforts will be exercised in the future."

Further, as noted by the Strategy and GAO, there is not enough data or monitoring on the Great Lakes. According to the Strategy report "Unfortunately, ecosystem monitoring, observation, research, indicator development and modeling efforts in the Great Lakes region are currently under-funded, lack comprehensive ecosystem approaches and exist only as piecemeal programs."

I commend the coalition that drafted the Strategy for acknowledging the data problems and for recommending several approaches for addressing them. However, the strategy does not outline a priority system for when the various recommendations, including those to address the lack of data, should be implemented. This is a critical piece that is missing.

The Strategy calls for an infusion of nearly $20 billion for the next 5 years. In most cases the Strategy does not identify the source of the funds but much of it appears to be designated as Federal dollars. In its report to the President, the Great Lakes Interagency Task Force noted that in fiscal year 2004, the Federal Government alone spent over $523.9 million on Great Lakes Basin restoration projects and over the course of the next 10 years, anticipates spending $5 billion. We need to take a very close look at the 200 programs currently operating in the area and the $523.9 million we are currently providing to the region. Is there overlap and redundancy? Can some of the funds be used to meet a higher priority goal within the Strategy? These are questions that must be answered before we can consider adding to the Federal contribution.

Included in the $20 billion request is $7.5 billion in Federal grants to assist the Great Lakes States with meeting their water infrastructure needs. This is in addition to the Strategy's call for full funding the Clean Water SRF at $1.35 billion and the Drinking Water SRF at $1 billion. I agree that the SRF needs to be fully funded because it meets a nationwide need. However, we must heed the advice of the Interagency Task Force when it stated that restoration goals should "focus on what can be accomplished within current projections." While I disagree with the Administration's proposed cut to the clean water SRF, I must question how we can provide $1.5 billion per year to the Great Lakes basin in grants when we cannot even fund the national clean water loan program at $1 billion per year.

The lack of data and the lack of funding are nationwide problems and are not limited to just the Great Lakes Basin. Therefore any effort to address them must be part of a nationwide approach that will assist all communities, not just those in the Basin. We simply cannot provide funds to these States while ignoring the needs of other States, including my State of Oklahoma which itself has pressing water quality needs but lacks a national program office at the EPA.

I understand the significance of the Great Lakes to our Nation and in particular to the people who live within the Basin. There is a limited Federal role in the restoration of this and other watersheds. Particularly in these times of limited Federal resources, we must look at requests for these regional priorities in the context of their current funding and the funding available for similar problems throughout the Nation. We must also ensure the money is being spent wisely and efficiently. While much progress has been made in just the past few years in terms of the oversight of the Great Lakes programs, much more is needed before we can add to the Federal contribution of over one half a billion dollars per year.

My colleague, Senator Voinovich, will chair the remainder of the hearing.

OPENING STATEMENT OF HON. JAMES M. JEFFORDS, U.S. SENATOR FROM THE STATE OF VERMONT

Senator JEFFORDS. Good morning. I know we are all pressed for time, so I will make a few quick remarks and submit my full statement for the record.

We know that water quality problems do not respect State or national boundaries. No program knows this better than the Great Lakes. As you will see on this map, Lake Champlain has two hydrologic connections with the Great Lakes ecosystem. The first is along the Canadian border through the St. Lawrence into Lake Ontario. The second is along the southern part of the lake where it connects to the Great Lakes through the canal system.

These lakes are all part of the same ecosystem, and face many of the same problems. We do not want to make large investments

in the Great Lakes or Lake Champlain only to find that a failure to comprehensively address a particular issue limited our success.

We know that water quality problems do not respect State or national boundaries. No program knows this better than the Great Lakes. I urge the witnesses here today and the members of the committee to keep Lake Champlain, the eastern end of the Great Lakes ecosystem, in mind as we move forward.

As we move forward on Great Lakes restoration, we must incorporate Lake Champlain into the process. Mr. Chairman, I want to take a minute to identify something else these two ecosystems have in common: they are both starved for money. In the face of huge documented needs, this Administration proposed this year to cut Clean Water funding by almost 50 percent from what annual the appropriations were when President Bush took office. We cannot resolve the problems in the Great Lakes and Lake Champlain by ignoring them. We must turn the corner on clean water funding.

Before closing, I am pleased to welcome Mr. Bill Howland, the director of the Lake Champlain Basin Program, who will be testifying on our last panel today. Thank you, Mr. Chairman.

[The prepared statement of Senator Jeffords follows:]

STATEMENT OF HON. JAMES M. JEFFORDS, U.S. SENATOR FROM THE STATE OF VERMONT

Good morning. The Great Lakes are the Nation's largest fresh water reservoir. This is a resource we need to protect.

As you will see on this map of Vermont and New York, Lake Champlain has two hydrologic connections with the Great Lakes ecosystem. The first is along the Canadian border through the St. Lawrence into Lake Ontario. The second is along the southern part of the lake where it connects to the Great Lakes through the canal system.

These lakes are all part of the same ecosystem, and face many of the same problems. For example, there are 48 invasive aquatic species in the Lake Champlain Basin, and 13 of them have come from the Great Lakes. It is imperative that we enact legislation to comprehensively address invasive species this Congress.

As we move forward on Great Lakes restoration, we must incorporate Lake Champlain into the process. We do not want to make large investments in the Great Lakes or Lake Champlain, only to find that a failure to comprehensively address a particular issue limited our success.

We know that water quality problems do not respect State or national boundaries. No program knows this better than the Great Lakes. I urge the witnesses here today and the members of the committee to keep Lake Champlain, the eastern end of the Great Lakes ecosystem, in mind as we move forward.

Mr. Chairman, I want to take a minute to identify something else these two ecosystems have in common: They are both starved for money. In the face of EPA's own study showing a spending shortfall of $270 billion for water infrastructure needs, this Administration continues to cut spending. This year's proposed budget would cut the Clean Water State Revolving Fund by almost 50 percent from what annual appropriations were when President Bush took office.

At our committee's hearing on the EPA budget, I said that this budget is like an ostrich sticking its head in the sand. We cannot resolve the problems in the Great Lakes and Lake Champlain by ignoring them. We must turn the corner on clean water funding.

Before closing, I am pleased to welcome Mr. Bill Howland, the director of the Lake Champlain Basin Program, who will be testifying on our last panel today. Bill's experience leading efforts to restore Lake Champlain is unmatched, and I look forward to hearing his thoughts on the Great Lakes strategy and the role of Lake Champlain.

OPENING STATEMENT OF HON. GEORGE V. VOINOVICH, U.S. SENATOR FROM THE STATE OF OHIO

Senator VOINOVICH [presiding]. Thank you, Senator Jeffords.

I would like to publicly thank Senator Inhofe for allowing us to hold this hearing and for bringing Great Lakes restoration to the full committee's attention. I welcome all of our witnesses who have taken time out of their very busy schedules. I also want to thank the Great Lakes Commission and the Northeast-Midwest Institute for including this hearing on the agenda for their annual Great Lakes Day. We are hoping to see more of you every year on this day. It is one way we can all monitor our progress on this special project that we all care so much about.

As has been pointed out, we have a challenging morning, four stacked votes at 10:30. So we are going to move along as quickly as we possibly can. I am going to limit my statement to a couple of minutes.

I want everyone to know that the members' and witnesses' statements will be inserted in the record so we can ask that everyone limit their time as much as possible. So here are a couple of points that I am going to make.

First of all, I think that Chairman Inhofe kind of put things into perspective as to where we are in terms of finances. I think Senator Jeffords did the same thing. My concern is that the domestic side of this budget is getting clobbered and there are many things that we ought to be doing that we are not doing. I think we have to face up to the fact that we may be penny-wise and pound-foolish. There are things that we are just neglecting. I think Senator Jeffords is aware, he talked about the Safe Drinking Water Revolving Loan Fund and the Clean Water Revolving Loan Fund and so many other things that need to be taken care of that are not being addressed. I think that is the big picture issue that all of you ought to be concerned about as we move forward.

Restoration of the Great Lakes, what I call the Second Battle of Lake Erie, has been a long time commitment for me. This is my 40th year in fighting that battle. We have made great progress. But you all know that more needs to be done. Shared by eight U.S. States and one Canadian Province, the Great Lakes watershed is the largest system of surface fresh water in the world. Let me repeat that: it is the largest surface fresh water system in the world.

I have held two hearings, including an EPW field hearing in Cleveland on the issue, and a 2003 report by GAO pointed out the two main barriers to our restoration: lack of coordination and no strategy. Lack of coordination and no strategy. I lobbied President Bush for his leadership on this issue and he signed an Executive order that created the Great Lakes Interagency Task Force to bring together 10 agencies and over 140 Great Lakes Federal programs, and to call for a regional collaboration of national significance. I think the President should be given credit for issuing this Executive order, and I would be remiss if I did not mention Steve Johnson's predecessor, who just did an outstanding job in putting this program together. We are very, very grateful to him.

Over the past year, 1,500 people worked in eight issue-specific teams to develop the strategy that we are focusing on today. This

collaborative work is showcased in our long and illustrious list of witnesses and I thank them for being here.

I am interested in two key points as we move forward. First, we need to examine the management of what is the biggest restoration project in the world. Real important. I think that Senator Jeffords is familiar with the work that we did with the restoration of the Everglades. That has not gone as well as a lot of folks would like it to, and I want to make sure that we don't make some of the mistakes that they have made with what we are doing.

Second, we need to do better and get a bigger bang for our dollars. One of the things that we hope would happen, when you get all these agencies together and 140 programs, that they would figure out how, they would understand they had a symbiotic relationship and figure out how they can get more for the money that is now being provided.

A lot of great work has been done. We must continue to work together if we are going to truly implement the restoration strategy. I look forward to hearing from the witnesses.

[The prepared statement of Senator Voinovich follows:]

STATEMENT OF HON. SENATOR GEORGE V. VOINOVICH, U.S. SENATOR FROM THE STATE OF OHIO

Mr. Chairman, thank you for agreeing to bring restoration of the Great Lakes to the full committee's attention. It has been a lifelong commitment for me.

It is a great pleasure to hold this hearing and continue what I call the "Second Battle of Lake Erie" to reclaim and restore Ohio's Great Lake. I made a commitment to this fight nearly four decades ago as a State legislator and have continued it throughout my career. Considering that Lake Erie was once known as an international symbol of pollution and environmental degradation, it is remarkable the progress that has been made to clean it up.

The improvement of the Great Lakes is a testament to the dedication of numerous officials and groups in the region that have focused on this resource but our work is not done. This effort has not gained the attention nationally or internationally that it deserves and needs.

Shared by eight U.S. States and one Canadian province, the Great Lakes watershed is the largest system of surface freshwater in the world. They support a wide array of wildlife and provide over 40 million people in the United States and Canada with drinking water, recreation, and much more. Approximately 60 percent of U.S. manufacturing is contained within the Great Lakes region. The commercial and sport fishing industry alone contributes over $4 billion annually to the Nation's economy.

A prime example of a regional issue that gained national significance is the Florida Everglades. As Chairman of the Subcommittee on Transportation and Infrastructure, I had the distinct pleasure of working on the Comprehensive Everglades Restoration Plan. I learned from this experience that restoration requires that stakeholders have a symbiotic relationship. The Everglades plan became a reality only after everyone came together and made it a national ecological restoration project.

A 2003 report by the Government Accountability Office (GAO) clearly pointed out that this had yet to occur for the Great Lakes. Two main barriers to Great Lakes restoration were identified: lack of coordination and no strategy. I held two hearings on how to address these issues, including a field hearing by this committee in Cleveland in August 2003.

These hearings convinced me that leadership was desperately needed. I personally lobbied President Bush and he responded. In May 2004, he signed an Executive order officially recognizing the Great Lakes as a national treasure and addressing the problems identified by GAO. The Order created the Great Lakes Interagency Task Force with EPA as the chair to bring together 10 agencies and over 140 Great Lakes Federal programs. Additionally, it called for the Federal Government to partner with State, local, tribal, and other interests in the region to establish a "regional collaboration of national significance."

The Great Lakes Regional Collaboration met in Chicago in December 2004 and returned only 1 year later to release a strategy to restore and protect the Great Lakes. Our long and illustrious list of witnesses testifying today is representative of the over 1,500 people who worked in eight issue-specific strategy teams ranging from aquatic invasive species to toxic pollutants.

I welcome all of our witnesses who have taken time out of their very busy schedules to be with us. I also thank the Great Lakes Commission and the Northeast-Midwest Institute for including this hearing on the agenda for their annual "Great Lakes Day."

While I am interested to hear how the Collaboration's strategy will guide future restoration activities, I am particularly interested in two key points as we move forward. First, we need to examine the management of what is the biggest restoration project in the world. Who is the "orchestra leader"? How do we best coordinate an eight State, binational effort? Second, we must consider fiscal realities. What do we need to do in terms of new and existing programs at the international, Federal, State, and local levels to get the biggest bang for our buck?

The Great Lakes are near and dear to my heart. I consider my battle to preserve and protect Lake Erie and all of the Great Lakes to be among the most significant of my career and of my life. A lot of great work has been done, and we must continue to work together if we are going to truly implement the restoration strategy. The decisions that we make today will determine the longevity of this national treasure that is so important to public health, the environment, our economy, and our children and grandchildren.

Again, thank you Chairman Inhofe for allowing me to hold this hearing. Thank you also to all of our witnesses. I look forward to hearing from you.

Senator VOINOVICH. We are pleased today to have my senior Senator, Senator DeWine. I always tell everyone he is the senior Senator and I am the senior citizen Senator. Of course, Senator Levin, who is the co-chair of the Great Lakes Task Force, with Senator DeWine and Senator Stabenow. We appreciate your being here today. We all realize we have a lot to do, and I would appreciate if you could, just summarize your statements for us this morning and we will certainly include them in the record.

Thank you for being here. We will start with Senator DeWine.

STATEMENT OF HON. MIKE DEWINE, U.S. SENATOR FROM THE STATE OF OHIO

Senator DEWINE. Thank you, Mr. Chairman. I really appreciate the opportunity to be here this morning and really, it is good to see such a strong showing of Great Lakes support, not only on the panel but in the audience.

We know the Great Lakes are a unique natural resource that need to be protected for future generations. They hold one-fifth of the world's surface fresh water and cover more than 94,000 square miles. Over 100 species in the basin are globally rare or found only in the Great Lakes Basin. Six hundred thirty-seven State parks in the region accommodate more than 250 million visitors each year. The Great Lakes are significant to the States and Canadian provinces that border them, as well as the millions of other people around the country who fish in the Lakes, visit the parks surrounding the Lakes, or use product that are affordably shipped to them via the Lakes.

Unfortunately, the Great Lakes remain in a degraded State. The 2005 report from a group of scientific experts says that historical threats are combining with new ones. The result is that the Lakes are at a tipping point. We need to act now.

We cannot see the threats to the Lakes just by looking at them. Zebra mussels, aquatic invasive species cause $500 million per year in damages to the Great Lakes. One study found that since 1990,

Lake Michigan's yellow perch population has decreased by about 80 percent. In May 2004, more than 10 billion gallons, 10 billion gallons of raw sewage and stormwater were dumped into the Great Lakes. In that same year, over 1,800 beaches in the Great Lakes were closed, 1,800. Each summer, Lake Erie develops a 6,300 square mile dead zone. More than half the Great Lakes region's original wetlands have been lost along with 60 percent of the forests.

Because of these threats, and with encouragement from those of us in the Great Lakes region, the President issued an Executive order in 2004 calling for a Great Lakes regional collaboration of national significance. This process brought together experts who adopted a set of recommendations for Federal, State, tribal and local actions. Using those recommendations, Senator Levin and I, as well as our colleagues in the House, will introduce a bill to implement those recommendations.

Our bill will do several things. One, it would reduce the threat of non-native species invading the Lakes through ballast water. The bill targets the Asian carp and would authorize the Corps of Engineers to improve the dispersal barrier project and prohibit the importation of interstate commerce of live Asian carp.

Two, it would address threats to fish and wildlife habitat by reauthorizing the Great Lakes Fish and Wildlife Restoration Act at $20 million, a program that provides grants to States and tribes. Three, the bill would reauthorize the State revolving loan fund and provide $20 billion over 5 years to assist communities with improving their wastewater infrastructure.

Further, it would authorize $150 million per year for contaminated sediment cleanup under the Great Lakes Legacy program and provide EPA with greater flexibility in implementing the program. The bill will also establish a new grant program to phaseout mercury in products. It would improve existing research programs and fill the gap where work is needed.

Finally, the bill would establish the Great Lakes Interagency Task Force and the Great Lakes Regional Collaboration Process to coordinate and improve Great Lakes programs.

Mr. Chairman, Senator Jeffords, today's hearing is a perfect opportunity to bring attention to one of our Nation's natural treasures and the resources needed to keep the Great Lakes protected for future generations. Through the work of the Great Lakes Task Force and the efforts of other members like you in holding these hearings, we have been able to make positive changes on the Lakes. Unfortunately, we all know that more work is needed.

I hope this committee is able to move legislation that will help protect and restore the Great Lakes, because the Lakes need attention and they need action now.

I thank the Chair.

[The prepared statement of Senator DeWine follows:]

STATEMENT OF HON. MIKE DEWINE, U.S. SENATOR FROM THE STATE OF OHIO

Good morning. I appreciate the opportunity to be here this morning. It's good to see such a strong showing of Great Lakes supporters.

The Great Lakes are a unique natural resource that need to be protected for future generations. They hold one-fifth of the world's surface freshwater, and cover more than 94,000 square miles. Over 100 species in the Basin are globally rare or

found only in the Great Lakes Basin. The 637 State parks in the region accommodate more than 250 million visitors each year. The Great Lakes are significant to the States and Canadian provinces that border them as well as to the millions of other people around the country who fish in the lakes, visit the parks surrounding the lakes, or use products that are affordably shipped to them via the Lakes.

Unfortunately, the Great Lakes remain in a degraded state. A 2005 report from a group of scientific experts says that historical threats are combining with new ones, and the result is that the Lakes are at a tipping point. We need to act now.

You cannot see the threats to the Lakes just by looking at them. Zebra mussels—an aquatic invasive species—cause $500 million per year in damages in the Great Lakes. One study found that since 1990, Lake Michigan's yellow perch population has decreased by about 80 percent! In May 2004, more than 10 billion gallons of raw sewage and stormwater were dumped into the Great Lakes. In that same year, over 1,850 beaches in the Great Lakes were closed. Each summer, Lake Erie develops a 6,300 square mile dead zone. And, more than half of the Great Lakes region's original wetlands have been lost, along with 60 percent of the forests.

Because of these threats and with encouragement from those of us in the Great Lakes region, the President issued an Executive order in 2004, calling for a Great Lakes Regional Collaboration of National Significance. This process brought together experts who adopted a set of recommendations for Federal, State, tribal, and local actions. Using those recommendations, Senator Carl Levin and I, as well as our colleagues in the House, will introduce a bill to implement those recommendations:

Our bill would do several things:

• It would reduce the threat of non-native species invading the Lakes through ballast water. The bill targets the Asian carp and would authorize the Corps of Engineers to improve the dispersal barrier project and prohibit the importation or interstate commerce of live Asian carp.

• It would address threats to fish and wildlife habitat by reauthorizing the Great Lakes Fish & Wildlife Restoration Act at $20 million, a program that provides grants to States and tribes.

• The bill would reauthorize the State Revolving Loan Fund and provide $20 billion over 5 years to assist communities with improving their wastewater infrastructure.

• It would authorize $150 million per year for contaminated sediment cleanup under the Great Lakes Legacy program and provide the EPA with greater flexibility in implementing the program

• The bill would establish a new grant program to phase-out mercury in products, and it would improve existing research programs and fill the gap where work is needed.

• Finally, the bill would establish the Great Lakes Interagency Task Force and the Great Lakes Regional Collaboration process to coordinate and improve Great Lakes programs.

Mr. Chairman, today's hearing is a perfect opportunity to bring attention to one of our Nation's natural treasures and the resources that needed to keep the Great Lakes protected for future generations. Through the work of the Great Lakes Task Force and the efforts of other members, like you, in holding these hearings, we have been able to make positive changes on the Lakes. Unfortunately, more work is needed. I hope that this committee is able to move legislation that will help protect and restore the Great Lakes because the Lakes need attention and action now. Thank you.

Senator VOINOVICH. Thank you, Senator DeWine.

Senator Levin.

STATEMENT OF HON. CARL LEVIN, U.S. SENATOR FROM THE STATE OF MICHIGAN

Senator LEVIN. Mr. Chairman, Senator Jeffords, thank you first of all for holding this hearing and I would of course welcome putting the entire statement into the record, and I will cut it short, in response to the Chairman's request.

While some of the environmental protections that were put in place, have been put in place, have helped the Great Lakes make strides toward recovery, the 2003 GAO report makes it clear that there is much work still to be done. The report says that "Despite

early success in improving conditions in the Great Lakes Basin, significant environmental challenges remain, including increased threats from invasive species and cleanup of areas contaminated with toxic substances that pose human health threats."

Plans to address these well documented problems have been in place, the problems are well known. The region has invested in Lake-wide management plans, remedial action plans, the U.S. Policy Committee's Great Lakes Strategy 2002. We have a strategic vision for our fisheries and we now have the Great Lakes Regional Collaboration Strategy which was the result of the Presidential Executive order.

I am really delighted that a wide-ranging and highly inclusive group has been formed. The Healing Our Water Coalition, whose sole purpose is restoring the Great Lakes, is great news for the Great Lakes and for the future of our Lakes.

I am disappointed that the Administration did not include funding in its proposed budget to implement the recommendations of the Regional Collaboration Strategy, which was the process that the President began with his own 2004 Executive order. The Strategy recommends that $20.1 billion be provided over 5 years, of which $10.5 billion would be new Federal funding. That funding, as the Strategy points out, is needed in the Great Lakes now to address so many things.

The plans are plentiful. There is no shortage of plans. The data is available. There is no shortage of data. It is the funding which is inadequate. That is what we all are committed to try to provide, despite the challenges which we face, challenges which have been eloquently and accurately outlined by you, Mr. Chairman.

When you compare the funding, by the way, between the Everglades and the Great Lakes, the Great Lakes receive about half of what the Everglades receive in Federal funding. So it is not only the first time that the so-called regional funding is provided in our budget, federally and necessarily so, may I add. I think Senator Jeffords' point is also important, however, that we make sure that we have a comprehensive approach to the waters of the Great Lakes, as he outlined.

Finally, Senator DeWine has described the effort which we made last year in introducing the Great Lakes Environmental Restoration Act. He has described also the bill which we are introducing with our House colleagues. It is a Restoration bill which is comprehensive, it is based on recommendations from the Great Lakes Regional Collaboration Strategy, and I will leave the bill summary for my statement rather than to repeat what Senator DeWine has said.

The Great Lakes, Mr. Chairman, are a unique treasure for the world. You can see the Great Lakes from the moon. I must say, a little bit chauvinistically that what is outlined by the Great Lakes is one particular State which is a competitor of the Chairman's State, at least in football and basketball. Also my good colleague, Senator DeWine's State. So I won't say that it is Michigan that is outlined, I will leave that for my statement as well.

[Laughter.]

Senator LEVIN. We have an obligation as stewards of the Great Lakes. It is an ethical obligation. It is a fiduciary obligation. I

thank our Chairman and all those who work to carry out this responsibility.

[The prepared statement of Senator Levin follows:]

STATEMENT OF HON. CARL LEVIN, U.S. SENATOR FROM THE STATE OF MICHIGAN

Good morning, Mr. Chairman and Ranking Member. I want to thank you for the opportunity to testify this morning on the state of Great Lakes environmental restoration.

The Great Lakes are vital not only to Michigan but to the Nation. Roughly one-tenth of the U.S. population lives in the Great Lakes basin and depends daily on the lakes. The Great Lakes provide drinking water to 33 million people. They provide the Great Lakes States' largest recreational resource. They form the largest body of freshwater in the world, containing roughly 18 percent of the world's freshwater. Only the polar ice caps contain more fresh water. They are critical for our economy by helping move natural resources to the factory and to move products to market.

Yet the Great Lakes are not being protected as they should be.

Those of us who have lived near the Great Lakes have seen many changes over the years. We have seen water levels rise and fall, water quality improve and decline, and fish populations grow and fall. Some of these changes are part of a natural cycle, but many are the direct result of our management policies.

While the environmental protections that were put in place in the early 1970's have helped the Lakes make strides toward recovery, a 2003 GAO report made clear that there is much work still to do. That report stated: "Despite early success in improving conditions in the Great Lakes Basin, significant environmental challenges remain, including increased threats from invasive species and cleanup of areas contaminated with toxic substances that pose human health threats."

The Great Lakes problems have been well-known for several years. The region has invested in Lakewide Management Plans; Remedial Action Plans; the U.S. Policy Committee's A Great Lakes Strategy 2002; we have a strategic vision for our fisheries; and now we have the Great Lakes Regional Collaboration strategy which was the result of a Presidential Executive Order.

I am delighted that a wide-ranging, very inclusive group has been formed—the Healing Our Waters Coalition whose whole purpose is restoring the Great Lakes.

So I am very disappointed that the President did not include funding in the proposed budget to implement the recommendations of the Regional Collaboration strategy, the process that the President started with his 2004 Executive order. The strategy recommendations totaled $20.1 billion over 5 years of which $10.5 billion would be new Federal funding. That funding, as the strategy pointed out, is needed in the Great Lakes now to address so many things.

When you compare the funding between the Everglades and the Great Lakes, the Great Lakes receive about half of what the Everglades receive in Federal funding.

Invasive species are one of the largest threats to the Great Lakes. A new species is introduced into the Great Lakes about every 8 months. They enter the lakes in ballast tanks, on boat trailers, and through the Chicago Ship and Sanitary Canal. We need ballast technology on ships entering the Great Lakes and programs to address other pathways of introduction. Legislation is sitting before Congress that would reduce this threat and make a significant impact on the Great Lakes and all of our waters, but we have failed to act for 4 years.

Last year, Senator DeWine and I introduced the Great Lakes Environmental Restoration Act to take the strong and swift action that is necessary. Our bill would increase available funding for the lakes, improve coordination of Federal programs, and establish a monitoring program to help us make decisions on how to steer future restoration efforts.

Today, we join some of our House colleagues in releasing an outline for a new Restoration bill, based on the recommendations from the Great Lakes Regional Collaboration strategy. This bill would reduce the threat of new invasive species by enacting comprehensive invasive species legislation and put ballast technology on board ships; it specifically targets Asian carp by authorizing the operation and maintenance of the dispersal barrier. The bill would restore fish and wildlife habitat by reauthorizing the Great Lakes Fish and Wildlife Restoration Act. It would provide additional resources to States and cities for their water infrastructure. It would provide additional funding for contaminated sediment cleanup and provides the EPA with additional tools under the Great Lakes Legacy Act to move projects along faster. The bill would create a new grant program to phase-out mercury in products. It would authorize additional research through existing Federal establishments as

well as our non-Federal research institutions. And it would authorize coordination of Federal programs.

Mr. Chairman, the Great Lakes are a unique American treasure. If you were to stand on the moon, you could see the Great Lakes and recognize the outline of Michigan bounded by the lakes. We must recognize that we are only their temporary stewards.

If Congress does not act to keep pace with the needs of the lakes, the current problems will continue to build, and we may start to undo some of the good work that has already been done. We must be good stewards by ensuring that the Federal Government meets its ongoing obligation to protect and restore the Great Lakes.

Thank you.

Senator VOINOVICH. Senator Levin, I just want to make one comment, and that is that one of the reasons why the Everglades have done so well is because its plight has been brought to so many people and it has become a national treasure. I think that one of the biggest responsibilities we have is to bring to national attention, maybe even world attention, this treasure that we have. We need to restore and preserve it. I think the better job that we do with that, the more likely it is that we are going to get the kind of revenues that we need to get the job done.

Senator LEVIN. Thank you.

Senator VOINOVICH. Senator Stabenow.

STATEMENT OF HON. DEBBIE STABENOW, U.S. SENATOR FROM THE STATE OF MICHIGAN

Senator STABENOW. Thank you, Mr. Chairman and Senator Jeffords. It is always a pleasure to be here with my colleague and friend from Michigan, Senator Levin and Senator DeWine, and thank them for their leadership.

I also want to thank the four people who have come to be a part of the testimony today from Michigan, who traveled here to be with us today. We very much appreciate their leadership. We are so proud of the efforts going on with the healing of our waters and the Wage Foundation, all those who were involved in pulling together a fantastic coalition.

I will simply say in echoing my colleagues and reinforcing what they have said and putting my longer testimony in the record, that we all know that the Great Lakes are more than just 20 percent of the world's fresh water. For us in Michigan, it is part of our identity. We love the Great Lakes. It is about tourism, the economy, our way of life. It is about fresh drinking water.

As we all know, we have a passion for protecting the Great Lakes. I was very proud in 2001 to author the first successful ban on oil and gas drilling in the Great Lakes, which was a 2-year ban. I thank the Chairman again for his leadership in extending that, and for all that we have been able to do together.

Right now what we are focused on through the Great Lakes Task Force, as we all know, is the implementation of the regional collaboration strategy. I would simply echo the fact that we have had a lot of efforts, a lot of studies, a lot of groups come together. It is time to act, as we know. It is about the funding, it is about the commitment. It is about having a longer term vision that will actually get the job done.

We don't need right now just another group looking at this or another study. What we need is a sense of urgency. When we look at the data, it is very clear that we need a sense of urgency to act

right now, to protect the Great Lakes. I appreciate the Chairman's leadership,a nd with my colleagues, all of us working together to implement this legislation, hopefully we will see the kind of commitment coming from the Administration and our colleagues in the House and the Senate coming together to really, on our watch, get the job done.

Thank you, Mr. Chairman.

[The prepared statement of Senator Stabenow follows:]

STATEMENT OF HON. DEBBIE STABENOW, U.S. SENATOR FROM THE STATE OF MICHIGAN

Good morning, Mr. Chairman and Senator Jeffords. I want to thank you for holding this hearing on an issue that is personally very important to me—the protection and restoration of our Great Lakes. I also want to thank the four witnesses from the great State of Michigan who traveled all the way to Washington to be here this morning. And finally, I want to thank Senator Levin and Senator DeWine for their leadership on our bipartisan Great Lakes Task Force.

There is no more important issue to Michigan and our region of the country than the Great Lakes. For the people of Michigan, the Lakes are more than just one-fifth of the world's fresh water and a unique ecosystem—they are part of our identity. The Lakes are where we spend summers with our families, where we boat and swim, and where we fish and hunt. The Lakes also sustain our State and local economies by providing a major route for intrastate and international commerce. The health and future of Michigan is directly linked to the health and future of the Great Lakes.

We in Michigan are blessed with a beautiful State full of lakes, rivers, forests, and streams. I invite you all to come to travel to Michigan and see for yourselves.

The people of Michigan have more public access to waterways than all of the other 49 States combined. We enjoy access to four of the five Great Lakes and more than 40,000 interior lakes, streams, and trails. This rich abundance of natural resources has made the outdoors a critical part of Michigan's economy and our way-of-life. The Great Lakes are key in this. Consider:

- The total revenue from Michigan's fishing, hunting and wildlife watching is nearly $5 billion every year.
- Fishing brings $2 billion annually to our State economy.
- Michigan has the most register boaters of any State (nearly one million) and recreational boating brings $2 billion annually to the State.

You can see why restoration of the Great Lakes is so important to us.

So we are extremely proud of the Great Lakes Regional Collaboration Strategy, which seeks to coordinate current and future efforts to restore and protect this important national resource. There are currently between 140 and 200 separate Great Lakes environmental programs administered by 10 Federal agencies. Each of these is important and has helped us significantly improve the health of the Great Lakes over the past 35 years. That said true restoration will take local, regional, and national coordination on projects that address all of the critical challenges facing the health of the Great Lakes. Everything from invasive species and habitat restoration to cleaning up contaminated sediments and improving water quality must be given equal attention if we are to truly restore the Great Lakes. In the next few weeks, Senator Levin, Senator DeWine, and I, along with other members of the Great Lakes Task Force, will introduce a bill that implements the Regional Collaboration Strategy. I hope that my colleagues on this committee will expedite this important legislation. In addition, we must have a long-term funding commitment to realize the goal of our Restoration bill. Authorization is a critical first step, but without follow-through we will not succeed in restoring the Great Lakes.

We take our commitment to the Great Lakes very seriously. At the State level we are very busy making sure important protections for the Great Lakes are in place. Just 2 weeks ago, Governor Granholm signed legislation that for the first time protects Michigan waters from large-scale water diversion and withdrawals. The bipartisan comprehensive water legacy legislation is the result of 2 years of work by a group of lawmakers, environmental groups, industry, and agriculture advocates.

I know that the members of this committee understand the importance of the Great Lakes to Michigan, the seven other Great Lakes States, and to the Nation. I look forward to working with you on the Great Lakes Regional Collaboration Im-

plementation bill to secure the future protection and restoration of natural treasure. Thank you.

Senator VOINOVICH. Thank you, Senator Stabenow.

I am pleased that Senator Clinton has joined us, and I understand you have a short statement that you would like to make, Senator.

OPENING STATEMENT OF HON. HILLARY RODHAM CLINTON, U.S. SENATOR FROM THE STATE OF NEW YORK

Senator CLINTON. Thank you, Mr. Chairman, and thank you for your leadership in this issue.

I just want to add my voice to those who care deeply about the Great Lakes. I grew up on one of the Great Lakes, I represent New York, where approximately 80 percent of New York's fresh surface water, over 700 miles of shore line and 40 percent of New York's lands in over 25 counties are containing the drainage basins of Lake Ontario, Lake Erie and the St. Lawrence River. This is a very important part of our natural heritage.

It also is an important part of our economy. In a 2001 study, it was estimated that expenditures in New York on freshwater fishing are approximately $1.9 billion. So I invite you all to come fishing on the Great Lakes, but also as a indication of why it is important that we deal with this from an economic perspective as well.

I look forward to working with Senators DeWine, Levin and Stabenow in introducing legislation that would implement the recommendations of the Great Lakes Regional Collaboration. These are very important recommendations. I don't want them sitting on a shelf somewhere in a beautifully bound book. I want them implemented. The only way we can do that is through collaboration, but with Federal leadership.

Certainly, the plan calls for a set of actions over 5 years that would cost approximately $20 billion. We need to get on with it, because the longer we wait, the more the damage will intensify. It will be even more expensive. These Great Lakes are an absolutely essential part of our entire country's freshwater system, to say nothing of the stewardship that we should be expected to exercise over the natural beauty of creation.

So Mr. Chairman, I would ask unanimous consent to submit my entire statement, but I want to thank you again for your leadership.

Senator VOINOVICH. Thank you, Senator Clinton.

Our first witness this morning is Steve Johnson. Steve is the Administrator of the Environmental Protection Agency. As I mentioned previously, Steve, I want to publicly thank again Mike Leavitt for taking on this responsibility. I honestly believe Mike spent more time on this initiative than he did anything else at the EPA. I am really pleased that you seem to get the importance of the Great Lakes, not only to those of us from that part of the country, but also its national significance.

We are glad to have you here and we look forward to your testimony.

STATEMENT OF HON. STEPHEN L. JOHNSON, ADMINISTRATOR, U.S. ENVIRONMENTAL PROTECTION AGENCY

Mr. JOHNSON. Thank you very much and good morning, Mr. Chairman, Senator Jeffords and members of the Senate Environment and Public Works Committee.

On behalf of President Bush and my fellow members of the Federal Interagency Task Force, I am pleased to have the opportunity to be here on Great Lakes Day. Senator Voinovich, I would especially like to acknowledge your leadership in supporting the restoration and protection of the Great Lakes.

By establishing the Federal Task Force and calling for the Great Lakes Regional Collaboration, President Bush recognized the importance of the Great Lakes and their vitality, not just to the region, but to the entire country. The unique nature of these majestic lakes and the role and the cultural, economic and environmental well-being of our Nation requires us all to come together for their defense.

In order to deliver more efficient and effective Federal support, the Great Lakes Interagency Task Force was created, created to streamline and better coordinate the more than 140 Federal programs that protect and restore the Great Lakes. The importance of such coordination was highlighted in the Task Force October 2005 report, which estimated that the Federal Government spends approximately a half a billion dollars each year on Great Lakes water quality improvement programs. So far, much of the work has been focused on addressing high priority issues requiring interagency cooperation. The Task Force has identified 48 near-term actions to help speed restoration and protection.

The Task Force is improving coordination and integration among relevant Federal programs in the Great Lakes, and is developing a plan to address all components of the Executive order. The collaborative effort envisioned in the Great Lakes Executive order became a reality with the formation of the Great Lakes Regional Collaboration in December 2004. Federal agencies joined with the Great Lakes Governors, mayors, tribes and members of the congressional delegation where they worked together to develop a set of recommendations for restoring and protecting the Great Lakes. I appreciate the members who are joining us today.

After receiving extensive public comment, the Collaboration released its final strategy last December. This strategy serves as a blueprint for prioritizing future action, which will help guide our partners' actions to protect and restore the Great Lakes. President Bush remains strongly committed to the future of the Great Lakes. In his fiscal year 2007 budget request for EPA, President Bush requested over $70 million to clean and protect the Lakes.

This includes $50 million for the Great Lakes Legacy Act programs, which is an increase of about $21 million over last year's enacted budget, demonstrating a true commitment to preserving this natural wonder. This represents essentially full funding of the authorized level in the Great Lakes Legacy Act for cleanup of contaminated sediments in areas of concern. The budget request contains important funding for other agencies' work on the Great Lakes as well.

Once again, thank you, Mr. Chairman and members of the committee, for inviting me to participate in this hearing. I look forward to continuing to work with you and all our Collaboration partners to accelerate the pace of environmental progress in the Great Lakes. Thank you and I would be happy to answer any questions you may have now.

Senator VOINOVICH. Thank you, Mr. Johnson. Because we don't have the time that I would like to have today, because of the votes, I am going to ask you a couple of questions for the record and I am going to ask you some for this hearing.

The first one for the record is, you stated the Administration is implementing 48 near-term actions in 2006 to help speed restoration and protection of the Great Lakes. I am going to insert into the record a letter sent to the President from the Governors and mayors proposing near-term action items. For the record, can you please detail for each item whether you are implementing it and if not, then why not. So we want to know that. Be pretty specific about what we need to do, what are you implementing and what aren't you implementing, and if you're not implementing why you are not implementing.

Second, you mentioned the Asian carp barriers. We worked hard last Congress to provide funding and are now hearing about more problems. Senator Jeffords and I know about those barriers, don't we, Senator?

[Laughter.]

Senator VOINOVICH. For just a few dollars, we had to work several months to get the money.

We put language into WRDA, and I am going to insert into the record a letter that Senator Obama and I sent with over 40 members of the House and Senate. We want you to please provide us for the record a detailed update on the project and what the Administration is doing about it. That should be a lay-up shot and it is not getting done.

For the record, third, you detailed funding in the President's budget for Great Lakes programs. While you mentioned increases, the President's budget decreases in other key areas, such as the Great Lakes National Program Office, the Great Lakes Fishery Commission. I would like you to provide for the record a cross-cutting budget analysis on the increases and decreases for all the Federal programs that impact the Great Lakes.

For the hearing today, I am interested in the management of this effort. We have held two hearings that focused on that GAO report that pointed out two barriers to restoration, lack of coordination and no strategy. The big deal was no orchestra leader to get the job done.

The Interagency Task Force brought together 10 agencies and 140 Federal programs. EPA is the chair, but you have a lot of other responsibilities. This also involves eight States, Canada, cities, tribes and others. I would like to know how are we, who is going to be the orchestra leader? I hope it is not Region V, and have them take this on as a responsibility as was once envisioned. I think if you really look at the time Mike Leavitt spent on this, I think you understand how much work this is going to be. Could

you share with us just exactly how you intend to get this job done and give us that orchestra leader?

Mr. JOHNSON. Well, Mr. Chairman, I am the orchestra leader of the Federal Interagency Task Force, and I am proud to serve in that role. I think it is an important role, and I will continue to serve to make sure that the over 140 Federal programs are coordinated and we actually focus our attention on those critical actions that have been identified.

I think you may be aware, but we have newly approved the Great Lakes Regional Collaboration Strategy Implementation Framework, which in essence says what we have decided to do as a collaboration is to continue and to maintain our current organization of the executive committee, some of which are here today, to make sure that we have this team of people in place to help direct these efforts to make sure that the strategy that we have all worked so hard to put together is actually implemented.

As part of the direction of not only maintaining this current organization structure of the executive committee but also focusing on making sure that we are directing the activities, that we are promoting accountability, that we are actually demonstrating the results to all citizens, particularly the citizens of the Great Lakes.

Senator VOINOVICH. I am putting you on notice that we are going to have a hearing in 3 months on how you are handling this from a management point of view. Because I have to tell you, you have a lot of other responsibilities. I don't think you can expend the extraordinary time that Mike Leavitt spent on this. I would like to know we have some hotshot over there that gets up early in the morning and goes to bed late at night worrying about getting this job done.

So the last thing, and I will leave that for the record, too, is just that my hope was that as these agencies got together and you looked at the funding streams that were coming down the pike, that somehow we could demonstrate that we are utilizing those dollars in a much more efficient and effective way.

In other words, everybody is starting to look at what we are doing. How can we meld these dollars in order to have a greater impact on the challenges facing us? I would like to find out if any of that has occurred as a result of these folks getting together.

Senator Jeffords.

Senator JEFFORDS. Administrator Johnson, the Great Lakes Strategy identifies a funding need for wastewater treatment upgrades totaling about $7 billion over 5 years. This Administration's proposed budget for this year would cut the Clean Water State Revolving Fund by almost 50 percent from what annual appropriations were when President Bush took office. Can you describe how the EPA can be a serious partner in the Great Lakes Restoration when the Agency is totally unable to support the wastewater infrastructure needs identified in this strategy?

Mr. JOHNSON. Senator Jeffords, as you have pointed out, the needs for our wastewater treatment systems far exceed EPA's $7.3 billion total budget. What the President's 2007 budget requests is in light of his commitment to make sure that the State Revolving Loan Fund for the Clean Water program revolves at approximately $3.5 billion. The President's 2007 budget reflects that commitment

and again, the needs are great. But as part of the President's budget, we are honoring the President's commitment to make sure that we establish a Revolving Loan Fund of approximately $3.5 billion.

But you are correct, the needs are great, which is going to take more than just funds. It is going to take a number of other efforts, which we have launched, including issues of water efficiency and issues of using technology, because part of the President's 2007 budget was also an additional $7 million to help a research and development arm to identify those new technologies that will help us advance in the engineering and technology arena, so that we can help bridge that gap. There are other things we can do as well.

Senator JEFFORDS. I understand the problems you have. I just want to let you know that there is somebody sitting right here that is ready to go yelling and screaming for you. I wish you luck.

Senator VOINOVICH. I would like to point out one other thing, that if you are the coordinator, you have these other budgets of departments.

Mr. JOHNSON. Yes.

Senator VOINOVICH. The Army Corps of Engineers, when I was chairman of the subcommittee that had them, 5 years ago had a backlog of $250 million. Today it is $1¼ billion. So a lot of these agencies that are going to be essential to get the job done, the budgets just aren't there.

Senator Carper.

Senator CARPER. I am going to not ask any questions. I want to thank Administrator Johnson for being here. We have a lot of other witnesses to come and I think we are going to start voting any minute. So I will just refrain from asking questions and just say thanks.

Mr. JOHNSON. Good to see you, sir.

Senator VOINOVICH. We are looking forward, I am going to leave the record open so that my colleagues can get questions over to you and I appreciate your getting them back to us and perhaps maybe in the next several weeks you and I can sit down and talk about some of the things that I have raised here today and other Senators.

Senator VOINOVICH. Thank you very much for your testimony and we look forward to working with you.

Mr. JOHNSON. Thank you, Mr. Chairman. I look forward to it as well.

Senator VOINOVICH. Because of the cooperation of my colleagues today, we are moving along and hopefully we may be able to have an opportunity to hear from our third panel, my Governor, who is testifying on behalf of the Council of Great Lakes Governors and also Frank Ettawageshik, Tribal Chairman of the Little Traverse Bay Bands of Odawa Indians, that are with us today.

Governor Taft, I would like to say thank you for all of your efforts in the Great Lakes restoration. I think many people are not aware that you have been chairman of the Great Lakes Council of Governors for, I think, 4 years. That is heavy duty. I had it for 2 years and I was surprised to see that you had taken it on for 4. You have done a great job and I am glad that you are head of the Department of Natural Resources, Sam Speck, on the Great Lakes Charter Annex, which I wondered if it ever would get done. You

have done a great job of organizing, helping on the Great Lakes Regional Collaboration. We are really glad to have you here today. If you will start with your testimony.

STATEMENT OF HON. BOB TAFT, GOVERNOR, STATE OF OHIO

Governor TAFT. Mr. Chairman, first of all, thank you very much for your strong leadership on behalf of the Great Lakes. The Great Lakes community has reached an amazing milestone: 1,500 people, representing States, cities, tribes, the Federal Government, environmental, business and farm groups have come together in an unprecedented effort to create the Great Lakes Regional Collaboration Strategy, a blueprint for action to restore and protect the Great Lakes.

Now that planning is complete, it is time to act. Collaboration members are moving forward on a number of actions using our own resources, yet significant policy and funding impediments remain. Without your support here in the Congress in this critical first year, there is a danger that the plan will be for naught and our momentum will be undermined. That would be tragic, because the Great Lakes remain threatened by emerging environmental threats such as the introduction of a new invasive species every 8 months, and by historical problems, such as contaminated sediments.

A lack of sufficient coordination and focus among existing programs is also hindering progress. Congress can help by tackling problems that must be addressed on a regional or national level, such as the control of invasive species, by modifying the way funds are directed to the Great Lakes priorities to improve coordination, and by appropriating funds to address the most pressing environmental needs, as part of the current budget.

Let me address each of these areas in which we seek your assistance. Invasive species pose perhaps the greatest threat to the Great Lakes in a generation. Therefore we urge you to pass the National Aquatic Invasive Species Act. Second, in some areas, most notably wetlands restoration, a multiplicity of Federal programs with differing requirements complicates effective use of resources. In the Great Lakes Environmental Restoration Act, Senators Levin and DeWine have identified a promising way to direct funds toward priority needs. By funding priorities rather than programs, Congress can effectively channel the work of Federal, State and local agencies toward key objectives.

We applaud all the bill's sponsors and join their call for long-term large scale funding through a reform process. This will take time, and therefore we ask that you fund key actions in this budget. Specifically, the completion and operation of two permanent dispersal barriers in the Chicago Sanitary and Ship Canal to keep the Asian carp out of the Great Lakes. It will cost $6 million to protect the Great Lakes Fishery, a small fraction of its $4 billion economic value.

Second, support the President's request for the Great Lakes Legacy Act to be funded at $49.6 million. In Ohio, we are thrilled by the U.S.A. decision to use funds from the Legacy Act to clean up contaminated sediments in the Ashtabula River. Similar success

stories in other Great Lakes can be realized if Congress agrees to the President's request.

Third, provide an additional $50 million to the EPA's Brownfield program to clean up abandoned industrial waterfront properties in the Great Lakes Basin. The economic return can be tremendous. For example, a $3 million Clean Ohio fund grant at an abandoned manufacturing site in Sandusky is generating $37 million in private investment in housing, retail and outdoor recreational areas.

Finally, support the President's commitment to restore 200,000 acres of wetlands in the Great Lakes Basin by appropriate $28.5 million. These first steps will help fulfill the moral obligation to preserve the Great Lakes, a national treasure, for future generations.

The Great Lakes are also vital to our economic health. Thirty percent of our Nation's gross domestic product, 60 percent of U.S. manufacturing and shipping and tourism also produce significant economic activity. One specific problem illustrates the link between environmental restoration and economic viability.

As you know, Mr. Chairman, the Army Corps of Engineers annually dredges the Toledo harbor to maintain navigation. The corps has been depositing the sediments in the shallow western basin, which has been stressing the most productive fishery in the entire Great Lakes. We reached agreement with the corps to cut back on open lake disposal and eliminate it entirely by 2012, using the dredged material for a habitat restoration project. Ohio will provide the non-Federal match, and together we will turn a negative into a positive. This would be a striking example of collaborative success.

However, the agreement is seriously in peril, because the feasibility study did not qualify for funds under Section 204 of the Water Development Appropriations Act in Federal fiscal year 2006. The corps needs $1.2 million for this study. I ask that you specifically name this project in the 2007 Appropriations bill.

The lack of priority funding for this study parallels the lack of funds allocated to the dispersal barriers that I mentioned a few moments ago. Projects like these are key in our attempts to protect and improve the Great Lakes, require a small investment relative to the damage they promise to prevent, and need to be given serious consideration at the Federal level.

This matter is made more urgent by the fact that across Lake Erie, an average of 4 years of disposal capacity remains for navigation channel dredging. This looming crisis will force us to choose between dredging to support shipping and open lake dumping to the detriment of the Lake and its fishing and boating industries.

The Great Lakes Regional Collaboration is needed to address emerging problems such as this, to oversee implementation of its Strategy and to continue its collaborative work on behalf of Great Lakes restoration. We would welcome congressional action to codify both the collaboration and the Federal Interagency Task Force.

Our members are actively working to identify areas in which all levels of government can coordinate efforts toward clearly defined goals. While I have spoken today of how Congress can help, be assured that the Great Lakes States and other stakeholders remain

committed to doing our share to protect and preserve our greatest natural resource.

I am pleased that not only Director Speck is with me today, but also Director Joe Koncelik of the Ohio Environmental Protection Agency. We will be prepared to respond to whatever questions you all may have. Thank you.

Senator VOINOVICH. Thank you, Governor Taft. I really appreciate your testimony today, and I can assure you that some of the issues that you have brought before us are being worked on. I am personally involved in some of them. I understand how important it is that we move on them.

But it also underscores again the fact that the resources that we need to get the job done are not available. You were not here earlier, but we're concentrating all our attention in terms of working harder and smarter and doing more with less with the non-defense discretionary budget, which has been pretty well flat-funded the last couple of years. I think what we are doing is we're being shortsighted in that. It is a concern of mine and hopefully more of the members of the Senate and Congress will get it.

Just one example is the levees there in New Orleans. We had testimony by the top civil engineers in the country who basically said that had the budget been adequate, if they had done what they were supposed to do, they felt that those levees would have survived those winds. So I think that it is time for us to start looking at the big picture and we do have to do that. I had to do it when I was Governor, I had to do it as Mayor. It is about time that we in Congress did the same thing.

Thank you.

Governor TAFT. Thank you for your leadership, Mr. Chairman.

Senator VOINOVICH. Chairman Ettawageshik, we are so happy to have you here with us today to give the perspective of your tribe and I suspect some of the other tribes that are in the Great Lakes area. Thank you for being here today.

STATEMENT OF FRANK ETTAWAGESHIK, TRIBAL CHAIRMAN, LITTLE TRAVERSE BAY BANDS OF ODAWA INDIANS

Mr. ETTAWAGESHIK. Thank you, Senator. Mr. Chairman and members of the committee, boozho, hello. [Greeting in native tongue.]

My name is Noon Day, otherwise known as Frank Ettawageshik. I am the tribal chairman of the Waganawksing Odawa. Our tribe is from the lower peninsula of Michigan.

Senator VOINOVICH. Pardon me, could you get your mic a little bit closer?

Mr. ETTAWAGESHIK. It is known also as the Little Traverse Bay Bands of Odawa Indians.

I am here today with the humbling task of speaking on behalf of many tribes that make up the ad hoc tribal caucus of the Great Lakes Regional Collaboration. I am also here as a member of the executive committee for the collaboration. I would like to acknowledge several of the tribal leaders that are in the audience with us today as well. It is quite an honor for me and quite a responsibility to speak for so many people and so many different tribes. They put faith and trust in me to speak to the important role that tribal na-

tions play in the Collaboration and how the Collaboration's strategy can be implemented in a way that not only will achieve its ultimate goal of protecting and restoring the Great Lakes ecosystems but also in a way that is faithful to the U.S. treaty obligations and trust responsibilities to tribal nations.

We have submitted a written statement, and I realize that we are short on time.

But I have several points that I would like to make in this oral statement. Mr. Chairman, when considering matters of great importance, our tribal elders teach us that we must think beyond the current generation to the seventh generation. We are also taught that each of us living today is someone's seventh generation. As we carefully consider our actions and the actions of our governments, we must continually ask ourselves, what are we leaving for a future seventh generation?

We understand that the whole earth is an interconnected ecosystem. The health of any one part affects the health and well-being of the whole. We are taught that it is our spiritual and cultural responsibility to protect our local lands and water, in order to help protect the whole of mother earth.

We all often think of the Great Lakes as so large that they would be difficult to damage. But consider this image: from 30,000 feet, when you are flying west over Lake Michigan, there is a point when you can't see either shore and you are looking at this vast expanse of water. If you look down, you see one of those 1,000-foot freighters, and it looks about this big. If you take that 1,000-foot freighter and you were to stand it on its end in the deepest part of that lake, over 200 feet of it would be sticking up out of the water. The vastness of the Lake takes on a whole new, more fragile perspective when you think of it in this manner.

In the mid-1800s, in the Great Lakes States, we had a resource that was considered inexhaustible. Yet it lasted for barely two generations. This was our white pine forests. The white pine of the current century is our water. The work of the Collaboration has identified issues and suggested solutions. All of these proposals will require appropriations over many years. Numbers of dollars have been brought up here and were brought up in our plan. We really worked hard to bring those numbers down to a realistic number. Yet that number, with the budget concerns that there are today, that number seems very large indeed.

Tribal governments also allocate funds from our tribal enterprises to do this work of preserving and protecting the environment. We also utilize funding from the Bureau of Indian Affairs, EPA and many other Government agencies to accomplish our work. But the task is immense. The neglect and poor choices made by individuals and governments over the last century have compounded upon each other until no one government or people alone can accomplish the restoration and preservation without the help of the others.

We must all work together. We must do this now. The lack of adequate actions today will cause us much harm and additional costs in the coming years. Our grandchildren are waiting for our actions. Their grandchildren deserve to inherit an environment at

least as healthy and clean as the one that our grandparents grew up within.

Thank you.

Senator VOINOVICH. Thank you, Chairman. That was an eloquent statement, the seventh generation. I think all of us, particularly at the stage I'm at in my life, worry about the legacy for my children and for my grandchildren. I have been fighting the Battle of Lake Erie, the second battle, for 40 years. I happen to live where in a half a minute, I can be at the edge of the Lake. It is a great treasure. We should treat it as a great treasure. Thank you very much.

I have to go and vote. So Governor Taft, I know you are busy. What I will do, if you don't mind, I am going to submit my questions to you for the record.

I guess the biggest question I have is, your thoughts on how you organize this thing on a national level to make sure it gets the attention that it needs. I asked that same question to Steve Johnson and he came back with, he is going to do it. Well, as Governor, you know if it wasn't for Sam Speck and Joe Kocelik, your EPA director, you wouldn't be able to get a whole bunch of things done.

So I would really like to have you think, with some of your other governmental colleagues, how we can best organize this here in Washington to make sure that the job gets done. I want to thank both of you for being here. I am going to run out and hopefully be back probably in 20, 25 minutes, depending on what happens. Thank you.

Governor TAFT. Thanks, Mr. Chairman.

Mr. ETTAWAGESHIK. Thank you.

Senator VOINOVICH. The panel is dismissed and we are going into a short—I hope—recess.

[Recess.]

Senator VOINOVICH. The good news is we are resuming this hearing. The bad news is that the votes aren't finished. So I am going to try to see if I can't give our witnesses the chance to get their testimony before I have to run back and vote again. I think we should have, everything being equal, about 25 minutes. So I thank you all for being here. I thank you for your patience.

If you could, to the best of your ability, and I know it's tough, because I know you have these words you have worked on, I have been here, and then we say, well, you have 5 minutes or 4 minutes. So without further words, we have David Ullrich, who is the director of the Great Lakes and St. Lawrence Cities Initiatives, who is testifying for Mayor Daley, since he is sick. Please give the Mayor our regards and tell him how much I appreciate him. I was going to brag all about him, about all the leadership he's exercised with the mayors.

So we will start out with you, Mr. Ullrich.

STATEMENT OF DAVID ULLRICH, EXECUTIVE DIRECTOR, GREAT LAKES AND ST. LAWRENCE CITIES INITIATIVE

Mr. ULLRICH. Thank you very much, Chairman Voinovich. I greatly appreciate your having this hearing. Senator Obama, thank you so much for being here, and we appreciate all of the attention to the Great Lakes.

My name is David Ullrich. I am executive director of the Great Lakes and St. Lawrence Cities Initiative. It is a coalition of 48 U.S. cities and 37 Canadian cities, located along the Great Lakes and St. Lawrence. I am representing Mayor Richard M. Daley of Chicago, who could not be here today because of illness. He is the chair of the Great Lakes and St. Lawrence Cities Initiative. His written testimony has been submitted for the record and I will present his remarks today on his behalf.

I want to point out up front that attached to the Mayor's testimony is a letter from Mayor David Miller of Toronto, with whom the Mayor works very closely, who is vice chair of our Great Lakes and St. Lawrence Cities Initiative. He has indicated in that letter his support for Mayor Daley's testimony.

In 2004, the President issued an Executive order that formed the Federal Interagency Task Force and the Great Lakes Regional Collaboration. I would like to thank the Administration for their leadership in this regard. This was followed by a series of meetings that drew more than 1,500 people from 8 States and dozens of cities. They represented all levels of government, tribal members, the private sector and the non-profit community.

Those meetings resulted in a consensus on Great Lakes actions and investments for years to come. For the first time, we are all on the same page and a long-term strategy that will require large scale investment from all levels of government and stakeholders. Local governments are committed to doing their part for Great Lakes restoration.

The cities represented on our board of directors each spend an annual average of over $200 million for needs related to the Great Lakes, including drinking water, wastewater infrastructure, stormwater management, parks, open space, pollution prevention, shoreline protection. Great Lakes mayors are implementing innovative changes in water policy and sustainable building practices, stepping up efforts to conserve water, protecting our shorelines from erosion and passing ordinances to stop invasive species.

In Chicago, the Daley administration is ensuring that new city buildings are certified as green buildings and using incentives to encourage developers and citizens to conserve water and use stormwater as a resource. The city of Chicago is also building a stormwater tunnel that will collect clean rainwater from the roof of McCormick Place and return it to Lake Michigan instead of dumping it into the sewer system. The tunnel will keep approximately 60 million gallons of water out of the storm sewer system every years and conserve water and reduce sewer overflows during large storms.

Racine, WI is doing some of the most innovative work in the country on reducing beach contamination. Erie, PA and Rochester, NY have made great strides in reducing sewer overflows. Gary, IN is transforming 21 miles of contaminated industrial property along the Lake Michigan shoreline into publicly accessible park land. Cleveland, a city I know you're very familiar with, Senator, recently approved a lakefront plan to reconnect the city with Lake Erie.

Long-term protection of the Great Lakes will require a commitment at all levels. Of course, the Federal Government is no exception.

As a result of the regional collaboration process, the Great Lakes community has asked the Administration to support $300 million in new funding for programs that address a range of high priority issues. Local and State Governments would invest approximately $140 million in matching funds.

I would like to highlight several of these near term actions that are of critical importance. The Army Corps of Engineers must be authorized to build and operate two invasive species barriers in the Chicago Sanitary and Ship Canal, along with a $6 million appropriation to carry out this work. This is a fraction of the cost of the devastation the Asian carp could cause the Great Lakes.

We need comprehensive legislation to stop the next invasive species from coming into the Great Lakes and other important waterways. Invasive species legislation has lingered far too long. U.S. EPA's Brownfield program should be increased by $50 million and the funds should be targeted to shoreline communities around the country. We must fully fund the Clean Water State Revolving Loan Program, which helps cities repair aging water infrastructure. We also support the President's requests for full funding of the Great Lakes Legacy Act, and we ask you to support the President's commitment on 200,000 acres of wetlands and $28.5 million to be appropriated.

Legislation is being introduced——

Senator VOINOVICH. Mr. Ullrich, your time's just about up.

Mr. ULLRICH. OK, very good. I will wrap up.

Again, we greatly appreciate, and speaking for Mayor Daley, I know he would have far preferred to be here. Local government very much wants to be part of the solution. We sense the urgency and importance of this and are prepared to work with you, the States, the tribes, our Canadian neighbors to bring about what we all want in the Great Lakes.

Thank you very much, Senator.

Senator VOINOVICH. Thank you for being here.

Mr. Kuper, who is president of the Council of Great Lakes Industries. We are very happy to have you here today.

STATEMENT OF GEORGE H. KUPER, PRESIDENT, COUNCIL OF GREAT LAKES INDUSTRIES

Mr. KUPER. Industry, via the Council of Great Lakes Industries, welcomes the opportunity to be here, Mr. Chairman. Thank you very much. We want to express our support for additional and better coordinated Federal resources to restore our Great Lakes ecosystem.

We are also pleased to have been included in the collaboration process, the process that developed the restoration strategy that we are here to discuss. The resulting consensus around our Basin's needs is truly remarkable. However, we really believe the whole collaboration effort missed a huge opportunity by not focusing more directly on the specific elements necessary for sustainable development in the Basin.

So when it comes time to discuss specific aspects of the restoration strategy, we as industry do have more to say.

But in the meantime, the Nation as a whole needs to understand how important the health of the Great Lakes ecosystem is to our national well-being. Industrial managers are accustomed to making arguments for why their project or their plant or company is deserving of somebody's investment. Our region's leadership understands this, too.

But translating the need for Federal investment in regional ecosystem restoration is not something we've yet done very well. That situation is in spite of the remarkable contribution our region makes to the Nation's well-being, critical to both our national economic well-being and to our national defense capability. Our region provides one-third of the gross State product in the country from eight States, with less than a quarter of the U.S. population. In other words, our region carries more of its own weight, considerably more.

Sixty percent of the Nation's manufacturing is located in our region. That manufacturing base, along with the region's ecosystem, needs help. The region needs direct investment in ecosystem protecting infrastructure as called for by the restoration strategy.

I also need to make a plug. The region also needs national policy to support the transition from industry-supported health care and retirement burdens, which sit disproportionately on the region, and indeed, make us less competitive.

It is clear the region needs infrastructure to support the growth of our population and our continued industrial activity, while protecting our treasured natural resources. We have identified much of what has to be done and we do believe the restoration strategy will have a positive economic development impact on the region.

We are currently organizing an economic analysis jointly with the Healing Our Waters Coalition in order to identify and quantify these positive economic impacts. We hope to be able to report back to you on the specifics of the spinoff economic development impacts you can anticipate from funding key elements of the restoration strategy.

As I said, when it gets time to fund the specific actions identified in the restoration strategy, industry has more thoughts. I have outlined some of those in my written submission. For instance, with coastal health, we believe that sewage treatment capacity in the Basin needs to be expanded and improvements funded.

For toxic pollutants, because of the substantial reductions made already, it is now critically important to consider the magnitude and relative importance of the remaining levels of these materials from a risk management and a risk assessment perspective, to ensure that resources are directed to reductions that will have meaningful outcomes.

But the restoration strategy is not just about the specifics of what needs to be done. It is also about how we organize and govern those activities. We must make the most efficient use of public dollars to meet restoration and strategy objectives.

Over the last dozen years, I have been privileged to witness a transition in the way stakeholders engage in ecosystem issues in the Great Lakes Basin. The consensus represented by the restora-

tion strategy is but one example of a growing willingness to work together to achieve great ends.

Industry in the region, where many companies are in a fight for their continued existence, is pleased to be part of this process and support many of the initial recommendations of the restoration strategy.

Thank you.

Senator VOINOVICH. Thank you very much.

Mr. Buchsbaum.

STATEMENT OF ANDY BUCHSBAUM, DIRECTOR, NATIONAL WILDLIFE FEDERATION'S GREAT LAKES OFFICE AND CO-CHAIR, HEALING OUR WATERS-GREAT LAKES COALITION

Mr. BUCHSBAUM. Thank you, Mr. Chairman. My name is Andy Buchsbaum. I am the co-chair of the Healing Our Waters Coalition and also the director of the Great Lakes Office of the National Wildlife Federation.

The Healing Our Waters Coalition is a broad-based group of 85 organizations, including a dozen national, many local and State conservation, environmental and even government organizations and zoos and aquaria. We are dedicated to the protection and restoration of the Great Lakes and to the process, really, that you started with your hearings several years ago.

We thank you for your leadership, for the committee's leadership and for your championing of Great Lakes causes now for as long as you have been in public office. You are a true champion of the Lakes and we thank you for that.

You have heard from Senator Stabenow and others about the importance of the Great Lakes to the people in the region. In fact, a Joyce Foundation report, a study, a poll came out and said that 96 percent of the people in the Great Lakes region believe that Great Lakes protection and restoration are important. Ninety-six percent. You can't get 96 percent to agree what day of the week it is, and they agreed on that.

In my written testimony I go into more detail about my family background. Let me just emphasize here that the families in the Great Lakes, the millions of families in the Great Lakes, share memories, they share experiences that make the Great Lakes a way of life. You have heard also today, you have heard from several of the Senators and from Mr. Kuper about the importance of the Great Lakes to the Nation.

I just want to emphasize that that importance is reflected not only by those here, but those across the country. We have in the written testimony, there are quotations, quotes, support from representatives from coastal Louisiana, from the Chesapeake Bay, from Puget Sound. We will be submitting also, we have support also from the Everglades, of course, but they didn't get it in time for my testimony. But you will see that, we will submit that later.

We are very pleased to be partnering with the Council of Great Lakes Industries to look at the real hard numbers, economic numbers of what ecological restoration will mean for the Great Lakes economy.

But I want to return to something that Senator DeWine talked about right at the beginning, when he talked about scientists in the

region coming to a consensus that the Great Lakes were at a tipping point. This is a major change in the context of Great Lakes policy and restoration. Up until now, we thought, it's taken decades for us to get to this point in the Great Lakes, what's so urgent? It might be important, but what's so urgent about taking action?

This report identifies the urgencies, and it's alarming, it's shocking. It says that the Great Lakes ecosystem has experienced what they call ecosystem breakdown. They say the immune system is damaged. So what happens is that there is a cascading effect, a change reaction of degradation that occurs. These are not my words. These are the scientists' words. Their paper is in my written testimony as Appendix B.

They reached this conclusion because of some well-known problems, such as the growing dead zone in Lake Erie, but also because of similar problems they are seeing in Saginaw Bay, Lake Huron and also in Green Bay in Lake Michigan. There are some problems that aren't so well know, such as really the impending crash, the crash that's really already occurred, of the Great Lakes food web. Huge crash which is also in my written testimony, and as a chart, Appendix C, it graphically demonstrates that.

In fact, the scientists have said in the last 5 to 15 years, they have seen "the rapidness of this process is unique in Great Lakes recorded history." So we can't wait, we have to act now.

There is a common sense solution. If the immune system is damaged, you restore the immune system and you make sure that new insults don't come in. That's what the Great Lakes Regional Collaboration has done. It has provided a blueprint for wise investment.

You have heard about the precedent setting nature of the way those recommendations are made, and you have heard about the precedent setting nature of the recommendations. They follow the scientists' recommendations. That's not surprising, because the scientists were on those panels.

What they do is, they do three basic things. They attempt to fix and streamline existing programs, they authorize new programs where they are needed and they provide substantially new funding. All three are necessary to fix the Great Lakes.

Several quick highlights: wetlands and buffer strips are critical, because they provide the buffering capacity for the Great Lakes. That's essential in the Great Lakes Regional Collaboration Strategy. That repairs the immune system.

Stopping untreated sewage from dumping, a major Federal investment, but again, it's a new insult we have to do without. Probably the biggest problem identified by the scientists is the onslaught of invasive species, on average, one every 8 months. Unless we can stop those, the system can never recover.

There's plenty for you all to do. We encourage you to take up Senators Dewine's and Levin's legislation when it comes up, to make the funding priorities happen. I will be happy to answer questions.

I just want to leave you with one final thought, which is, which you said, Senator, at the beginning, penny-wise and pound-foolish, this is an investment we need to make. There is a return on investment. The longer we wait, the worse it will get. Thank you.

Senator VOINOVICH. I agree. Thank you.
Ms. Katz.

STATEMENT OF DIANE KATZ, DIRECTOR OF SCIENCE, ENVIRONMENT AND TECHNOLOGY POLICY, THE MACKINAC CENTER FOR PUBLIC POLICY

Ms. KATZ. Good morning, Mr. Chairman. My name is Diane Katz, and I am director of Science, Environment and Technology Policy for the Mackinac Center for Public Policy.

The Mackinac Center is a Michigan-based, non-partisan research and educational institute that assists law makers, the media and the public in evaluating policy options. We greatly appreciate the opportunity to join this discussion of the Great Lakes Regional Collaboration Strategy.

Before you is an ambitious strategy intended to restore the Great Lakes ecosystem. The architects of this strategy claim that we have failed to protect our beloved Lakes. The shortcomings of the current approach, however, stem not from any lack of regulation or resources, as the strategy report contends. On the contrary, the problem is the excess of well-intended but ill-conceived programs that fall under disjointed regulatory agencies at the international, Federal, State, provincial and local levels.

Unfortunately, the problem will not be remedied by the Great Lakes Regional Collaboration Strategy, which prescribes more unwieldy and inefficient regulation. As the report states, the Strategy was developed through an inclusive process aimed at achieving the broadest consensus possible. That means the Strategy is more a product of the political process than the scientific method, just like the existing regime.

Numerous restoration strategies for the Lakes have been hatched over the years. Most, if not all, have advocated an expansion of the regulatory State. But we will achieve better results only by applying the most basic truths of good governance, that incentives are more powerful than punishment, that sound science yields better results than rhetoric, and most importantly, that citizens are far better stewards of their property than the State will ever be.

There is no definitive accounting of the billions of dollars allocated for Great Lakes programs. That in itself says a great deal about the status quo. There is also no comprehensive accounting of the numerous Great Lakes programs initiated over the past three decades. To fill this information gap, the Mackinac Center has undertaken a census of Great Lakes programs that so far has identified more than 200 Government initiatives. Many lack measurable goals, and there is little of the coordination necessary to maximize environmental improvements.

Rationalizing these myriad programs was the principal tasks of the eight strategy teams that crafted the restoration plan. What has materialized instead is a regulatory wish list that is sweeping in scope but limited in scientific and economic rationale. Hopefully the executive committee will pursue meaningful change rather than tinkering at the margins. This would entail identifying for elimination dozens of redundant, ineffective programs while also advocating for the restoration of property rights, common law and

impartial risk assessment as the foundation of Great Lakes strategy. The Lakes deserve no less.

The Strategy also suffers from an internal inconsistency. On the one hand, the report laments the failure of existing programs to adequately protect the Great Lakes. On the other hand, the Strategy calls for greatly expanding the regulatory powers of the very government agencies that the Strategy argues have mis-managed the job. It's time to abandon the command and control methods that empower the environmental bureaucracy.

The Strategy is also compromised by its underlying supposition that the Great Lakes are teetering on the verge of collapse. In fact, water quality has improved dramatically during the past three decades in large measure because of more efficient technologies. Michigan's 2006 report, Water Quality and Pollution Control, states "The open waters of the Great Lakes have good to excellent water quality." Contrary to the tipping point theory, and it is only a theory, wildlife is thriving, with hatchery stocks comprising less than 20 percent of the trout population in Lake Superior. Moreover, eagle sittings have soared, while analysis of blood and feathers document a dramatic decrease in PCP concentrations.

Missing from the Strategy is any examination of Government's role in exacerbating contamination of the Lakes. Agricultural subsidies, for example, have long contributed to excessive use of pesticides, fungicides and herbicides. The infiltration of non-native species is a legitimate concern. But a lack of comprehensive data has precluded informed decisionmaking on environmental priorities.

Many Government agencies only collect data on program inputs, not outcomes. Similarly, the pesticide information grant program measures success only by the rate of inspections that result in enforcement action, rather than any actual reduction of pesticide runoff.

The waste of resources is rampant. For example, some 88 research vessels operate independently in the Great Lakes, according to the Great Lakes Association of Science Ships.

Senator OBAMA [presiding]. Ms. Katz, I apologize, but we are out of time on your initial testimony. You can submit the rest of it into the written record.

Ms. KATZ. OK. If I may just provide my recommendations, which are just five short sentences.

Senator OBAMA. OK. But we're all pressed for time.

Ms. KATZ. I understand.

Eliminating programs that cannot document environmental improvements commensurate with costs. A greater reliance on property rights and market based incentives to revive areas of concern. Private sector involvement in crafting more effective Great Lakes policy. Development of Basin-wide data base of ecological conditions, with which to set stewardship priorities and determine effective remedies.

Thank you.

Senator OBAMA. Thank you very much, and I apologize, we ended up being scheduled for votes, as all of you know. So Senator Voinovich and I and Senator Jeffords are going back and forth, playing a tag team here, so that none of us miss any votes.

Mr. Howland, you're batting cleanup. Then we will have an opportunity for some questions.

STATEMENT OF WILLIAM G. HOWLAND, MANAGER, LAKE CHAMPLAIN BASIN PROGRAM

Mr. HOWLAND. Thank you, Senator Obama.

I appreciate the opportunity to testify. My name is William Howland, I am the manager of the Lake Champlain Basin Program. I want to talk today about three particular points that focus on how intertwined the ecosystems of Lake Champlain and the Great Lakes are. Also the environment and economic disaster of invasive aquatic nuisance species. Then finally, the importance of sharing our management experience in Lake Champlain with that of the Great Lakes.

The Lake Champlain Basin program is a bi-State, international partnership to restore water quality and improve the economy of the Lake Champlain Basin. Our partnership, now in its 15th year, involves the States of Vermont and New York, the Province of Quebec, the New England Interstate Water Pollution Control Commission and numerous U.S.-Federal agencies. The Lake Champlain Basin program partners all work to implement a comprehensive management plan called Opportunities for Action, which is included, I believe, at every Senator's place as an exhibit. It is an evolving plan for the future of the Lake Champlain Basin.

The Great Lakes Regional Collaboration Strategy to restore and protect the Great Lakes being considered by this committee is a first-rate, comprehensive management plan with many similarities to our Opportunities for Action plan for Lake Champlain. It identifies the key challenges for the Great Lakes and it provides a clear road map for a collaborative restoration effort.

Today, water quality in many near-shore areas of the Great Lakes is experiencing terrible problems. It is virtually in a free fall in some of the near-shore areas where blue-green algae blooms are found, phosphorus and nutrient levels are surging and there are the continuing problems of invasive species. Present trends are heading toward drinking water that is a serious health risk for tens of millions of Americans, burgeoning numbers of invasive species and ecosystem impairments that will take centuries and untold billions of dollars to remedy should they continue on present trends.

Senate bill 508 provides a multi-State, multi-agency collaborative leadership of the sort that has a proven track record in Lake Champlain. The Lake Champlain Basin program, which was established by Congress in the Special Designation Act of 1990 and again authorized in the Daniel Patrick Moynihan Great Lakes and Lake Champlain Act of 2002, created our Federal, State and local Agency collaboration. S. 508 establishes a similar collaboration that will generate measurable in-the-water results to get this job done.

The common interests of Lake Champlain and the Great Lakes are made especially clear on this map here. Both Lake Champlain and Lake Ontario enter into the St. Lawrence River, as you can see. Also, the map shows a second water connection where the second part of Lake Champlain and the Great Lakes are connected by the New York Canal System and the Hudson River. This is an ex-

tensive canal system, which includes the Hudson River, which has been a passageway for aquatic nuisance species into Lake Champlain from the Great Lakes.

Unfortunately, zebra mussels, which are native to Europe, were introduced into the Great Lakes by shipping ballast waters and they invaded throughout the Great Lakes and then they invaded Lake Champlain by way of the Erie Canal, the Hudson River and the Champlain Canal. Now they are established throughout our Lake.

Of the 48 invasive aquatic species in the Lake Champlain Basin, 13 have entered Lake Champlain from the Great Lakes by way of the canals. So we applaud the recognition of this problem in the Strategy and the plan to re-examine the canals and consider the cost benefit of a barrier. Over the 15 years that we have been working at the Lake Champlain Basin program, we have issued nearly 600 research and monitoring and plan implementation contracts to guide our management. While we are only 120 miles long, I believe that our 15-year record of research and management is of value to the Great Lakes. My point is that we would get a better bang for the buck if we share lake management science that both our systems require.

We do have a memorandum of agreement with the Great Lakes Fisheries Commission that does provide for joint work and that is a model that we might be able to extend. We have in the Lake Champlain Basin reversed the trend of phosphorus loading in a number of tributaries. We have found ways to manage the water chestnut and we have removed PCB contaminated sediments in one large bay of the Lake. So we have some success stories, and we need to learn from the Great Lakes as well as to share our experience with them.

I appreciate the opportunity to testify today. The full extent of my comments and the two documents, Management Plan and the State of Lake Champlain, are included as exhibits. Thank you very much, Senator.

Senator OBAMA. We will make sure to include all of those into the record.

[The documents are retained in the committee's file.]

Senator OBAMA. Normally the freshman has to ask questions last, but I have this great opportunity to have the panel to myself.

[Laughter.]

Senator OBAMA. Let me start with you, Mr. Ullrich. One of the questions obviously in the amount of resources that we devote to Great Lakes restoration has to do with the degree to which this is considered a regional problem or a national issue. I'm wondering how your organization, how the Mayor and the various groups are thinking about where this ranks in terms of priorities, when we look at environmental issues across the country?

Mr. ULLRICH. The mayors, and I know Mayor Daley particularly and Mayor Miller of Toronto, have obviously put this on a very, very high priority level. The Lakes are so incredibly important to the quality of life and the economies of our cities that it must be extremely high. It's not only a national issue, it is clearly an international issue.

In many respects, I think people are starting to recognize that it's a global issue, with 20 percent of the surface fresh water in the world, we have an incredible responsibility to protect this. Particularly through this recent collaboration, I think there is a much better appreciation of the importance of integrating Federal, State, local, tribal levels, working with the stakeholders and then doing it across on an international level, to make sure that this many trillion dollar value resource that we have is really protected.

There are huge threats if we do not act in the very near future and have a sense of urgency. What we are going to pay down the road is going to be much higher and our grandchildren will look at us and say, why didn't you do it and make the investments back then?

So I don't think there is any question but that, in terms of Mayor Daley, Mayor Miller and the other mayors, for their own local priorities, what they think on a State and regional level, on a national level and international level, this must be a very, very high priority.

Senator OBAMA. Mr. Buchsbaum.

Mr. BUCHSBAUM. Thank you, Senator.

I completely agree with what Mr. Ullrich has said. We don't look at the Great Lakes as an environmental issue, just as Coastal Louisiana and Everglades really are not environmental issues. Mr. Kuper testified before, the Great Lakes drive the economic engine of the region as well. The economic engine of the region has a major say in the national economy.

More than that, the people in the Great Lakes Basin think of the Great Lakes as a part of their lives, or their way of life. They don't look at them as an environmental issue. Their ability to fish, to go swimming, to go out on the dunes to watch the sunsets is one thing. But the other thing is, they define the geography, the incredible geography of the region. They are huge. Yet they are fragile.

So the entire region's prosperity and identity are wrapped up here. It's really not an environmental issue and that's what makes it both a regional and a national priority.

Senator OBAMA. Good.

Mr. KUPER. When the representative of the National Wildlife Federation makes industry's argument better than industry does, I think we've accomplished a great deal.

[Laughter.]

Senator OBAMA. It's a good sign.

Mr. KUPER. I just think that we might want to raise the level of understanding of what we're about here. Teddy Roosevelt, who said, "The Nation behaves well if it treats natural resources as assets, which it must turn over to the next generation increased and not impaired in value." Pretty interesting, in 1910 he was saying this stuff.

Senator OBAMA. He was a pretty smart guy.

Mr. Buchsbaum, I noticed in talking about comprehensive invasive species legislation, I know there are some who have argued that that's a preferable approach to the ballast water discharge control approach. I was wondering if you could just elaborate on that just a little bit.

Mr. BUCHSBAUM. Sure. Ballast water discharges are probably the leading source of invasive species in the Great Lakes. But they are only one source. To really address invasives that enter the Great Lakes, you can't look at just one vector, which is what ballast water is.

So yes, we have to deal with ballast water discharges, we need to make sure that those are addressed. But there are invasives that come up through canals, there are invasive species that are brought in intentionally as pets or for food and other means. Invasives are used in education, baits, dumping bait in waters, transport of boats between waterways. There are all sorts of avenues and routes for invasive species.

If we just focus on ballast water, or we just focused on our region, we're slowing down the rate of invasive species into the Great Lakes, but ultimately we're just putting off the problem. We need a comprehensive approach like the National Aquatic Invasive Species Act, which I know is before this committee. It is just critical. It is not just critical for the Great Lakes. I believe that zebra mussels now have spread all over the Midwest, through the whole system. I apologize, as a citizen of the Great Lakes, they started with us in this country. We are the source of invasive species as well as the victim.

But that's the way it is for every waterway, for every place. So unless we do it comprehensively, we might delay the problem, but we won't solve it.

Senator OBAMA. Yes, Mr. Kuper.

Mr Kuper. I would just like to add, Senator, that the Collaboration advances are understanding, from a policy point of view, what we have to do and that it points out, there's a distinction between new introductions, which comes from the salties, and they are going to have to have treatment systems for their ballast water, versus the spread of exotic species by the lake carriers, which the Collaboration suggests they use best management practices. So already there is a better understanding as a result of the collaboration process as to what kind of policies we need to put in place.

Senator OBAMA. Good. I apologize, it turns out that Senator Voinovich hasn't quite made it back here yet. I am about to miss the last vote that we have to take. He will be back here in a second. I am just going to have to recess this just for one moment. Ms. Katz, you will be next. Everybody should tell the truth when Senator Voinovich returns, that it's her turn.

[Laughter.]

Senator OBAMA. So we will be right back. The committee stands in recess.

[Recess.]

Senator VOINOVICH [presiding]. We call the committee meeting to order. According to my staff person, Ms. Katz, you were going to respond to a question from Senator Obama, is that correct?

Ms. KATZ. Yes, we were discussing aquatic invasive species and ways to address that legitimate problem in the Great Lakes. I just wanted to suggest that with respect to AIS and some pending legislation, that many of the regulatory goals are unscientific, which undercuts the credibility of the proposals to deal with them.

For example, the Strategy calls for preventing all new introductions of aquatic invasive species into the Great Lakes, as well as the elimination of any or all persistent toxic substances to the ecosystem. But non-native species are an unavoidable fact of nature. To the extent that we lay out unrealistic or unscientific goals, we're not going to be as effective as we otherwise would.

Senator VOINOVICH. The organization you represent, where is it located?

Ms. KATZ. We're located in Michigan.

Senator VOINOVICH. Where is it?

Ms. KATZ. It's based in Midland, MI, and we have offices in the metro Detroit area and in Lansing.

Senator VOINOVICH. Who funds your organization?

Ms. KATZ. A great many individuals, foundations, companies. We have a variety of funding sources. We do not take Government funds, however.

Senator VOINOVICH. You're basically saying that the invasive species are a what?

Ms. KATZ. I'm saying there's a legitimate concern with the invasive species. I'm just suggesting that we would be more effective if we do not attempt to draw this as a bigger problem than it is, or to suggest unreachable goals.

Senator VOINOVICH. Well, I've been living with it for 40 years, and I have to tell you something. Invasive species are terrorists.

[Laughter.]

Ms. KATZ. Yes, and I've been living with them for 50 years. I agree we need to respond to the problems.

Senator VOINOVICH. Zebra mussels and quaga mussels, and you get the carp into this Lake and God help us. So there are many of us that want these, we're going to try and get this Act passed. We are trying to get the Coast Guard to inspect these boats and get at their ballast waters where they empty them out, then they come in and they say they're all right. But then they clean them out in some of the ports and this stuff gets into them.

Ms. KATZ. I'm hoping that we do in fact dramatically reduce the introductions of invasive species. I'm just suggesting that if our goal, if we throw our resources at a goal of eliminating them all, then we're going to lack resources to take care of other problems as well.

Senator VOINOVICH. Well, we need a whole lot more resources.

Is somebody here from the Army Corps of Engineers? OK. According to the information I have, the corps budget has been riddled, in the budget. We have to get real about some of these things. If we don't do something about them, ultimately we're going to lose our Lakes.

So anyhow, Mr. Ullrich, I'd like you to answer questions in terms of two key hurdles that you stated: excessive bureaucracy and funding delivery. I would also like you to comment about how we coordinate with Canada, as you included a letter from Toronto, Mayor David Miller. I also want to insert testimony from Canada into the record, which we will do.

[The referenced information referred to may be found on pages 133–134 and 216–220.]

Senator VOINOVICH. I was really pleased that earlier, I don't know if he's here or not, but Senator Grafstein is here today, or was here. Jerry and I have been friends for a long time. I'm on the Canadian-U.S. Interparliamentary Group. In our last meeting, we brought up the issue of the Great Lake and what we should do. He's working on a task force there in Canada to kind of coordinate all their activities so that maybe down the road we can kind of get both groups together.

As many of you know, I had hoped, and I do hope that the President and the new Prime Minister will come together and agree that this is going to be the most significant bilateral effort in the world, to restore our Great Lakes. I think it will require the resources and cooperation of all of us to get that job done. I am looking forward to that happening here.

So I would be interested in your comments, Mr. Ullrich.

Mr. ULLRICH. Certainly, Mr. Chairman. I think you are aware how much Mayor Daley does not like bureaucracy, and the importance of cutting through it as much as possible. Simply stated, we can't have this mix of 140 different programs spread out over 10 plus Federal agencies and expect to be able to deliver Great Lakes protection in an effective manner.

I think that this Interagency Task Force is definitely a step in the right direction. But as reflected in your exchange with Administrator Johnson this morning, it's too big a job, when you look at the number of programs and the number of agencies involved. It seems somehow or another there's got to be a consolidation of those.

We would suggest a good place to start would be with wetlands programs. It's a priority for the President, it's critically important to the quality of the Lakes and to the wildlife and fish. Frankly, we continue to keep losing wetlands across the Basin. I have an unofficial count of somewhere in the neighborhood of 35 to 40 different wetlands programs spread across the Federal Government.

But I think that would be a good place to start, and looking at this combined issue of programs and bureaucracy, to really focus that down and have real accountability measures on an annual basis is, are we restoring and increasing as my understanding the President wants, and there's money in the budget to do some of this, or are we in fact losing them? So I think that is critical.

In terms of the cooperation with Canada, which is absolutely essential at every step of the way, and why Mayor Daley reached across the Lakes to Mayor Miller and the other mayors is that we're neighbors. I don't care if we're hundreds of thousands of miles or kilometers apart, we're neighbors, because this same water that we have out in front of Chicago flows by Toronto, Quebec City, Montreal, out the St. Lawrence River.

So recognition of that up front is critical, and I know that the Governors work with the premiers, have done so on the annex process recently. There is good cooperation at the Federal level with a bi-national executive committee. We really need to focus on this new Great Lakes water quality agreement in terms of that's the mechanism to really bring people together more. The mayors, I think the tribes need to be part of this, along with the States and the Federal Government, but really focusing and honing in on all

of that I think could make a big difference. The place to start is with the wetlands program.

Senator VOINOVICH. OK.

Senator JEFFORDS. Mr. Howland, what are your thoughts, after hearing the testimony today, on the most effective means for Lake Champlain Basin program to collaborate on Great Lakes restoration?

Mr. HOWLAND. Senator, we noted in the Collaboration document that about 1,500 stakeholders and partners put the consensus effort together, and aquatic nuisance species management was the first goal to appear in that document. We feel that that was well placed.

I think that our Lake Champlain experience is that aquatic nuisance species invasions, many of them from the Great Lakes, have been one of the most severe headaches that we have. I feel that our existing collaborative document, a memorandum of agreement between the Basin program, Lake Champlain Basin program partners, and the Great Lakes Fisheries Commission, which we operate under and have for the last period of time, is a good model.

But we would be hopeful that as this management strategy takes place and as the Senate bill to authorize a collaborative partnership coordinating Great Lakes management takes shape, that the Basin program for Lake Champlain could have some advisor or observer role, to share our management experience with the Great Lakes and to reciprocate. Because it is clear that our problems are so similar, we hope that that would be a possibility.

Senator JEFFORDS. Mr. Ullrich, I noted in your written testimony that there are no mayors from the Lake Champlain Basin in your group. What are your thoughts on how we can increase participation from that region and what the primary areas of cooperation might be at such a local level?

Mr. ULLRICH. A place to start would be at our annual conference this summer up in Perry Sound, Ontario. I have spoken with your good director of the Lake Champlain program, we are going to try to get him up there as well. Also, we will reach out to the mayors out there. As you know by our name, we are Great Lakes and St. Lawrence because of the critical integration of those two resources and the extent to which the Lake Champlain Basin ties in with the St. Lawrence Basin, we open our doors to mayors up there. We have quite a few from Quebec. I don't see any reason why we can't open our doors and arms up there, and I will work with your director to make sure that that happens.

Senator JEFFORDS. Mr. Buchsbaum, how do you explain the difference between the scientific assessment of the Great Lakes with the view presented by Ms. Katz?

Mr. BUCHSBAUM. I can't. There are, we've been working in the scientific community for decades. Government scientists, non-government scientists, academics alike, 60 of the region's leading scientists in a very scientifically sound, non-ideological way were asked, what's wrong with the Great Lakes and how do you fix it, and what's the condition of the Great Lakes.

They came up with a report which I actually found shocking. I have been working in this region, in this area for a long time. I thought things were not good. But as Ms. Katz said, water quality

is better, there are some indicators that have gone up, some of the Government reports are somewhat favorable.

The scientists say that when you look under the surface, you are seeing ecosystem crashes in large swaths of ecosystem. They are seeing it, the anoxic zone in Lake Erie, they can't explain it. They don't know why it's there. They don't know what's going on. They don't know how to fix it. They are seeing massive changes in the Lake Erie ecosystem, including botulism and bird die-offs and all sorts of things that show that the ecosystem is sick.

In Lake Michigan, they in large, vast stretches of the lake bottom, they can't find any freshwater shrimp, diporeia, which is the basis, it's 80 percent of the food that fish eat. They can't find any in vast stretches. They've gone from 10,000 organisms per square meter to 5 or 10 or zero in places. Now the science is documenting that's happening not only in the southern part of Lake Michigan, but throughout Lake Michigan, in Lake Huron and Lake Erie and parts of Lake Ontario. So the scientists, this information has been well-known to the scientific community for the last 5 years, but it's not getting out to the public. Now, and certainly it's not getting into policymakers.

So now that we know, that's why the scientists have said, I'll quote that again, they said that "The rapidness of the process of change is unique in Great Lakes recorded history." These are 60 of the leading scientists in the region, from all the major universities, Government scientists, Canadian scientists, U.S. scientists. So I guess I respectfully simply disagree with the assessment of the Mackinac Center on this one.

There will always be questions as to what's to be done. There will always be questions as to how bad the problem is or what the causes are. There will always be theories. But if we wait to take action until every I is dotted and every T is crossed, we will be much too late, and we will not have, the Great Lakes will not be there.

Now, let me say one thing about another consensus that's emerging. It's about invasive species. Most scientists believe that invasive species are probably the worst problem facing the Great Lakes. Because you can't bring a system into equilibrium when you're getting a new insult, a new invader, to shake up the ecology every 8 months. On average, that's what we have.

So what we're doing now is absolutely not working. That's one of the reasons for the fundamental changes that were recommended by the Great Lakes Regional Collaboration, and that's one of the reasons why we support them so strongly.

Senator JEFFORDS. Well, sir, that is reassuring.

Ms. KATZ. Senator, if I may respond.

Senator JEFFORDS. Ms. Katz.

Ms. KATZ. I would explain it as a difference in opinion on degree as opposed to kind. That is, we have seen throughout the last 30 years or so when it has come to environmental issues a great range of opinion on the degree of risks that are posed by various environmental issues. I would say that there is a pretty big chasm sometimes between scientists who are arguing for much more Government action, who see a much more elevated risk versus those who,

while cognizant of changes in the environment, may not be viewing them as cataclysmic.

So I would suggest that for every scientist that Mr. Buchsbaum is able to bring to the table, claiming that the Great Lakes are about to crash, there could be another scientist at the table who would say there have been changes, that ecosystems are not static. In fact, these changes may be bringing about effects that we don't want to see, but that we are not on the verge of environmental doom.

Senator JEFFORDS. I want to say thank you, but I'm not sure that's the appropriate word. But thank you.

Senator VOINOVICH. I will comment that we had hearings on the issue of the dead zones in the Lake with some of the best scientists, and they can't explain it. That is worrisome. So we need to continue to work on that research, to see if we can't pinpoint just exactly what the real problem is.

But I think that, I sure don't want to get into another argument in this committee on climate change. We've been dealing with that for several years around here. I think we know that there are some things that need to be done and we need to get on with them.

Mr. Kuper, I was kind of impressed with the fact that you are doing an economic analysis and impact of investments.

Ms. KATZ. Jointly, Mr. Chairman.

Senator VOINOVICH. Jointly, good. Because I think that there are two things that need to be done. One is if we don't do it, here's what's going to happen in terms of the economy and the fishery and all the other things that are connected with it, including, Mr. Kuper, including getting the Army Corps of Engineers budget to where it is, because the docks, locks, you name it, that's very important to moving transportation. We're in deep trouble right there with that situation all over the country.

In fact, many people are worried about whether we're going to be able to transport agricultural commodities because of what's happened there. We've kind of just closed our eyes to it.

But in addition to that, in terms of getting money from Congress, the commitment, it's also good to be able to say, "gee, if you do this, it's going to have some positive impact on the economy of the area." I'd like to commend, maybe the two of you, on what you're doing.

Mr. BUCHSBAUM. We're looking at, what we would like to do is have a researcher—a top-notch researcher, someone with national prominence, we have somebody in mind that we're negotiating with now—look at several different levels of economic impact restoration might have. There's the direct impacts, fishing, tourism, things that you would associate with the Great Lakes.

We're also looking at the next level of impact, which would be the way that property values might change, the way that cities might change the way they do their investments. Then there's a final level we're looking at, which is looking at how the Great Lakes create a, I hate to say competitive advantage, because I don't want to disadvantage other reasons, because this is a national effort. What sort of asset does the Great Lakes bring to the region that the region's economy can essentially market to the rest of the country and the world. Is that fair?

Mr. KUPER. Very clearly done, yes. Our problem right now is, though, we're at the stage where we're trying to organize funding for this project. It doesn't come for free, it's fairly expensive. We also understand that it needs to happen fast. So we're working very hard at bringing this to bear.

Senator VOINOVICH. I'd like to ask you, as you were talking about money, we have the Great Lakes Protection Fund, and I know that quite well, because when I was Governor, we fully funded Ohio's share of it. There's only seven States that participate in it.

I just wonder whether or not this project that you're talking about might qualify for that. States get an annual distribution of funds from the fund and then there's a competitive process that's in place to do research work. It seems to me that this might be some source of revenue to you. I'm not sure it fits into the charter of it. But I would think that you could well argue that it does.

Mr. KUPER. With your recommendation, we'll ask them.

[Laughter.]

Senator VOINOVICH. I'll get on the phone and call Governor Taft right now.

[Laughter.]

Senator VOINOVICH. The other thing that we talk about, metrics. That's real important to me, because so often we get into doing things and then we really don't go back and measure what we've accomplished or not accomplished. My last year as Governor, actually about a year and a half before, we came up with what we called the Lake Erie Water Quality Index.

What it did was measure where we were in terms of fishery, in terms of wetlands and other things that impact on Lake Erie. We had been doing all this work over the years and never had something that kind of captured where we were. I had hoped that the next Administration would maybe 4 years later take another snapshot and just see where we are.

I have long felt that we need that for the Great Lakes. I've cosponsored the Great Lakes Water Quality Indicators and Monitoring Act that would create an index to measure water quality for all the Great Lakes. I'd like to know, are you familiar with it and what would your thoughts be. I'm interested, too, Ms. Katz, about your opinion.

Ms. KATZ. Thank you.

Mr. KUPER. Mr. Chairman, there are a number of people who think similarly to you in terms of demand for understanding where we are in the ecosystem, where we are making progress and where we need to make more progress. There has been an effort mounted by Environment Canada, jointly with the Great Lakes National Program Office and the U.S. EPA called the State of the Lakes Ecosystems Conference, which is a biannual affair that convenes scientists from throughout the Basin. They have developed some 80 different indicators that they want to accumulate data on, so they can start answering the very questions you're asking across the Basin bases.

The next meeting will take place in November. We have invested very heavily in the success of this effort, because like you, there's no point in making an investment unless you know why you need

to make the investment and whether or not your investment is making progress. So we're very anxious that this should happen.

There's also a burgeoning effort under the Oceans Observing System. There's a Great Lakes program being mounted by the Great Lakes Commission to achieve water quality data more remotely and more comprehensively than we have to date. There are a number of issues going on in the Basin that, you're correct in pointing out, need to be brought together. Perhaps this committee would like to hear from the State of the Lakes Ecosystems Conference organizers. They produce a report that might influence your thinking.

Senator VOINOVICH. Thank you.

Ms. KATZ. Senator, if I may.

Senator VOINOVICH. Yes.

Ms. KATZ. I think science information about Lake conditions is crucial. It's crucial for us to know what priorities need to be set and what actions need to be taken. I would suggest that a lot of resources for that effort could be amassed were we to eliminate programs that are sucking up funding but are not as effective as more research would be.

I would also suggest that another very important aspect of our research needs to be on program effectiveness. Right now we are allocating huge sums of money to dozens and dozens of programs, most of which we have no idea whether they are having any impact whatsoever.

Senator VOINOVICH. As part of the work that your organization does, have you got a report on all that?

Ms. KATZ. We are in the process of doing a census on Great Lakes programs. I'd be happy to communicate with your office on the information that we have to date, and when it's finished.

Senator VOINOVICH. I'd appreciate that, if you spend the time on it, looking at a program and how long has it been in existence and what result have we got back from it. I think all of us would be interested in that perspective on it.

Ms. KATZ. OMB has run some initial evaluations and has, those are available and I would be happy to pass those along as well.

Senator VOINOVICH. Mr. Howland, do you want to talk about this?

Mr. HOWLAND. Thank you, Senator. The State of the Lake report which you referenced is our attempt to describe the conditions presently in Lake Champlain. We have chosen some indicators to do that. In fact, we are now, this last year, introducing an ecosystem indicators program that will evaluate the pressures on the lake ecosystem. Those include economic as well as physical, environmental pressures, measurements of the State of the Lake, with a number of indicators for that, and indicators of the management response. So we have a pressure-state-response model. The management response should change the pressures and improve the State. This is the model that we have chosen for Lake Champlain. We are now in the process of trying to identify what the best indicators are, and coincidentally, I think we are looking also at a slate of 80 candidate indicators. This is where the best science available to us, and to other Lake systems, has kind of converged on the same need. We have to be able to show outcomes for the funding that we use. We have to be able to show progress to our public and our citizens, and

we have to also be to recognize our problems and know how to address them.

The State of the Lake report that you have there is our latest best assessment of where we are. We will hope to be doing that every 3 or 4 years, according to our present plans.

Senator VOINOVICH. That's wonderful. We will look at it as part of this legislation that we have.

Mr. HOWLAND. We hope that some process that can be shared with our colleagues in the Great Lakes and that we can benefit from the work on indicators that they are doing, because this is a developing initiative of ours. That's one of the reasons we are eager to have a collaboration.

Senator VOINOVICH. Thank you. I want to thank all of you. It's 12:30, and I know some of you have to be somewhere at 1 o'clock o'clock. I want to thank you very much for being here and thank you very much for your patience today.

I have several more questions that I'm going to go through and prioritize and you may be getting a little letter from me asking for your response. We're going to get in writing the answers to some of the questions that you heard me ask Mr. Johnson. I will share them with you.

In addition to that, we'll be getting from him a specific plan in terms of how he's going to handle this initiative. Then I'd be really interested in getting feedback from you as to whether you think that's adequate to get the job done. Because the key right now is to make sure that we have someone that's going to give this the attention that it deserves, and that it's not going to fall off the list because there's other priorities that are commanding the attention of whoever it is that's supposed to be doing the work.

It's a major effort, and I want to thank everybody that's here. The fact that you got 1,500 groups together and, I just say, stick to it, keep it going. We are going to need your help. I think that if we continue to work together, we're going to make some progress.

I will say this, that a big problem that all of you should be aware of is the whole infrastructure problem. You can look at the Great Lakes and look at your needs there. But we have nationwide needs to be addressed. Quite frankly, this Administration and the one before it have basically kind of ignored it. The chickens are coming home to roost.

I think that we need to convince the American people that they have to invest in this infrastructure if we're going to maintain our quality of life and our competitiveness. Quite frankly, not run into situations like we ran into down in New Orleans, where had we done the job that we were supposed to do, it might not have occurred.

So thank you very, very much for being here today.

[Whereupon, at 12:33 p.m., the committee was adjourned.]

[Additional statements submitted for the record follow.]

STATEMENT OF HON. BARACK OBAMA, U.S. SENATOR FROM THE STATE OF ILLINOIS

Mr. Chairman, Senator Jeffords, in December, I wrote to the two of you and asked that you hold a hearing on the restoration strategy for protecting and restoring the Great Lakes. I greatly appreciate your accommodating my request and thank the witnesses for appearing today.

The Great Lakes are a natural wonder of the world that hold one-fifth of the world's fresh surface water. Lake Michigan alone provides over 40 percent of the drinking water used by the residents of my home State of Illinois. By providing drinking water, the Great Lakes are important to our citizens' physical health. By providing shipping, fishing and recreational opportunities, they are important to our region's—as well as our Nation's—economic health. Along with our neighbor to the north, Canada, we are the stewards of this great resource.

For some time now we have known that the natural ability of the Lakes to cleanse themselves has been stretched too thin. Using the best science and technology, we have tried to remedy the ills inflicted upon the Lakes but all too often, we have failed to do so in a coordinated manner.

The Great Lakes Regional Collaboration has been a remarkable break from the past. The Collaboration has attempted to examine the needs of the ecosystems present in the Great Lakes through a partnership of 1,500 stakeholders, including Government officials, private sector representatives, and environmental organizations. The Collaboration's recommendations do not contain all the answers, but they do provide a blueprint for rebuilding our way to environmental health. I'd like to take this opportunity to commend the participants in the Collaboration for their dedication to the Great Lakes, and their national service in meeting their commitment to the task at hand.

It is imperative that we not lose momentum, that we commit adequate resources to the effort, and that we provide the stewardship these resources deserve. Every day our Nation waits, restoration of the Great Lakes becomes more difficult and more expensive. Holding this hearing today is a step in the right direction. Hopefully it will be the first of many taken together in the weeks and months to come.

Thank you.

STATEMENT OF HON. RUSSELL D. FEINGOLD, U.S. SENATOR FROM THE STATE OF WISCONSIN

I thank the Environment and Public Works Committee for holding this hearing today. I also thank Senator Levin and Senator DeWine for their ongoing leadership as co-chairs of the Senate Great Lakes Task Force.

The Great Lakes are a national resource like no other. Beyond inspiring all those who witness their majesty, they provide freshwater for our communities, sustain numerous fisheries, support agricultural activities, and provide an economic base for the region, among other things. Unfortunately, like so many other of our natural resources, the Great Lakes require our immediate attention and commitment if they are to remain a vibrant resource for the country. I applaud the efforts of all those who participated in the Great Lakes Regional Collaboration—your willingness to spend a year working to compile recommendations to help restore the Great Lakes is commendable. All levels of government must heed the Collaboration's warnings and take action on its recommendations.

Finally, I am hopeful that today's hearing truly indicates a new pledge of stewardship not only with respect to the Great Lakes, but to all of parts of our environment. Continuing to turn a blind eye to the fact that our fate is tied to the fate of the environment will only result in more problems. In addition to caring deeply about the Great Lakes, my constituents also care about so many other natural resource issues. Whether it be safeguarding wetlands, reducing greenhouse gas emissions, or protecting wildlife refuges, the U.S. Senate must step up and provide the environmental leadership that my constituents, and the American public, yearn for.

STATEMENT OF STEPHEN L. JOHNSON, ADMINISTRATOR, ENVIRONMENTAL PROTECTION AGENCY

Good morning Mr. Chairman, Senator Voinovich, and members of the Senate Environment and Public Works Committee. I am pleased to have the opportunity to be here on "Great Lakes Day" to discuss the Strategy to Restore and Protect the Great Lakes that was developed by the Great Lakes Regional Collaboration. I would like to specifically acknowledge, Mr. Voinovich, your leadership and efforts in support of restoring and protecting the Great Lakes—one of our country's most important environmental treasures.

As we begin, I would like to highlight the $70 million request for the Great Lakes included in the President's FY07 budget for EPA. Nearly $50 million of this request is to fund the Great Lakes Legacy Act. This represents essentially full funding of the authorized levels in the Great Lakes Legacy Act (GLLA) for cleanup of contami-

nated sediments in the Areas of Concern, and is a clear demonstration of the Administration's commitment to the restoration and protection of the Great Lakes.

BACKGROUND

On May 18, 2004, President Bush signed the Great Lakes Executive Order establishing the Great Lakes Interagency Task Force and Promoting a Regional Collaboration of National Significance for the Great Lakes.

The Interagency Task Force was created to increase and improve collaboration and integration among the more than 140 Federal programs that help fund and implement environmental restoration and management activities throughout the Great Lakes system. It was also designed to help ensure that these programs are funding effective, coordinated, and environmentally sound activities.

The purpose of the Regional Collaboration was to create a partnership among the Federal Government, Great Lakes States, tribal and local governments, communities, and other interests to address nationally significant environmental and natural resource issues involving the Great Lakes.

Much has been accomplished to date to meet both of these objectives.

PROGRESS TO DATE/NEXT STEPS

The Interagency Task Force

In its October 2005 report to the President on Implementation of the Great Lakes Executive Order, the Federal Interagency Task Force estimated that the Federal Government spends approximately half a billion dollars annually in support of Great Lakes water quality improvement programs.

In addition, the Administration recently has committed to begin implementing 48 near term actions in 2006 to help speed restoration and protection of the Great Lakes. These activities address issues in all eight of the priority areas identified in the Great Lakes Regional Collaboration's recently released Strategy to Restore and Protect the Great Lakes.

Examples of these activities at EPA include: developing a standardized sanitary survey form, for use by the State and local governments to help identify sources of contamination affecting public beaches in the Great Lakes; providing improved policy guidance on managing peak flows at sanitary sewer plants to reduce overflows; conducting surveillance for emerging chemicals of concern; and, working with the Corps of Engineers to streamline and improve the permitting process for projects to restore wetlands and other aquatic habitat in the Great Lakes Basin.

These efforts are larger than EPA, however, and include collaborative efforts with our sister agencies. These activities include: restoring productive fisheries through efforts of the U.S. Fish and Wildlife Service and the Great Lakes Fishery Commission in partnership with States, Tribes, and Canada; conducting rapid watershed assessments on critical watershed areas to collect natural resource data and applying critical conservation on the ground through the Department of Agriculture; supporting authorization to make permanent the demonstration barrier on the Chicago Sanitary and Ship Canal through the Corps of Engineers; and, joining with the States in an equally shared effort to develop wetlands restoration plans that will enhance and protect a total of 200,000 acres through the Great Lakes Federal Interagency Task Force.

Next Steps

Of equal importance to these specific activities is the Task Force's attention to its charge to improve collaboration and integration among relevant Federal programs in the Great Lakes. To this end, the Task Force is developing a work plan for its efforts to address all components of the Executive order, including fostering consistent Federal policies toward the Great Lakes, developing outcome based goals, improving the exchange of information, coordinating scientific research programs, and collaborating with Canada on binational issues.

The Regional Collaboration of National Significance

The collaborative effort envisioned in the Great Lakes Executive Order became a reality with the formation of the Great Lakes Regional Collaboration (GLRC) in December 2004. The Collaboration partners, through the outstanding efforts of the eight Strategy Teams, spent the subsequent year developing recommendations for restoring and protecting the Great Lakes. After receiving extensive public input to the draft recommendations, the GLRC released its final Strategy last December. As part of the resolution signed at the ceremony marking the release of the Strategy, all of the Collaboration partners affirmed that the Strategy will guide future efforts to protect and restore the Great Lakes.

Next Steps

This unprecedented document offers a unique opportunity to make real improvements to the Great Lakes. For the first time, all levels of government, as well as our non-governmental partners, will be looking to the same goals, objectives, and recommendations to help guide their actions regarding the Great Lakes. The Great Lakes Regional Collaboration will continue into the future to guide implementation of the Strategy. The partners have been working on an implementation framework, which will ensure the plan is carried out and accomplishments are reported on.

The President's Fiscal Year 2007 Budget Request

The Administration already is using the Strategy as a guide as it plans its future activities in the Great Lakes basin. For example, the President's FY07 budget contains several requests for funding that will support priorities in the GLRC Strategy:

• As I mentioned earlier in my testimony, the budget for EPA includes essentially full funding of the authorized levels in the Great Lakes Legacy Act for cleanup of the Areas of Concern, almost $50 million or approximately 70 percent more than appropriated in fiscal year 2006. This funding will help leverage at least $25 million from our State and local partners as well. Already, 200,000 cubic yards of contaminated sediments were remediated through the Legacy Act in 2004 and 2005. We estimate that in 2006 and 2007, GLLA projects will remediate over 650,000 cubic yards of contaminated sediments.

• Several of USDA's conservation programs, including the Wildlife Habitat Improvement Program and the Conservation Security Program, would see increases. Of particular note is a proposed increase of 100,000 acres and $153 million over FY06 enacted levels for the Wetlands Reserve Program. These are all national programs, of course, but the Great Lakes basin stands to benefit as well.

• In support of Great Lakes regional collaboration, NOAA's budget requests $1.5 million to establish a Great Lakes Habitat Restoration Program that will mobilize NOAA's restoration assets to restore the Great Lakes' aquatic resources. This funding will be used to identify an optimal restoration plan and to provide outreach, facilitation and technical assistance to stakeholders and communities participating in the restoration activities. In addition, NOAA's budget contains an increase in funding of $1.5 million for its nation-wide Aquatic Invasive Species Program, a portion of which will benefit the Great Lakes.

• With an increase of nearly $18 million, the Corps of Engineers will continue construction of the McCook Reservoir flood damage reduction project that will virtually eliminate the backflows of raw sewage to Lake Michigan, reducing beach closings, and enhancing coastal health.

• And with an increase of over $12 million, the Corps of Engineers also will continue construction of a facility for the safe and effective management of more than 4 million cubic yards of contaminated sediments from the Indiana Harbor navigation channel and adjacent areas.

• A portion of the increase for the Department of the Interior's North American Wetlands Conservation Fund will help advance wetlands restoration in the Great Lakes.

• The Department of the Interior Fish and Wildlife Service budget includes funding for its Aquatic Invasive Species Program and an increase of more than $3.3 million to restore fish habitat and fish passage under the National Fish Habitat Initiative, portions of which also benefit the Great Lakes.

CONCLUSION

In closing, Mr. Chairman, I would like to thank you and the committee for inviting me to participate in this hearing. The Administration looks forward to working with you and all of our Collaboration partners to continue this important work, because it is only through concerted, coordinated action that we will realize our mutually held goal of a cleaner, healthier Great Lakes. I would be happy to answer any questions that you may have.

RESPONSES BY STEPHEN L. JOHNSON TO ADDITIONAL QUESTIONS FROM SENATOR INHOFE

Question 1. The Strategy establishes funding levels for each of its goals. However, there seems to be some disagreement as to who will be providing those funds. In your view, how much of the $20 billion in the Great Lakes Strategy do you expect from the Federal Government, the State governments and the local governments?

Response. All levels of government provide substantial resources to the Great Lakes. For instance, the Federal Government alone provides approximately $500

million annually to support Great Lakes water quality activities. As part of the Federal spending, the Interagency Task Force, which strongly believes in protecting the Great Lakes, is implementing 48 Near Term Actions within existing resources. To the Agency's knowledge, a comparable summation of current State and local activities and spending does not exist at this time.

As highlighted in the Interagency Task Force (IATF) Report on the Implementation of the Great Lakes Executive Order, the Federal Government strongly encouraged the regional collaboration to focus the strategy on activities that can be accomplished within current budget projections. The IATF also encouraged the collaboration to focus the strategy on prioritizing and coordinating these substantial resources across all of the Collaboration partners in order to improve efficiency and effectiveness while maximizing results. While the final Strategy acknowledged these principles, they were not used to guide development of the recommendations. For that reason, the IATF continues to have serious concerns with the Strategy, including the recommended funding levels. The IATF will continue to work with State and local partners to protect the Great Lakes.

Question 2. The near term actions outlined by the Council of Great Lakes Governors and the Great Lakes and St. Lawrence Cities Initiative in a letter sent to the President on December 12, 2005 and the near term actions developed by the Administration are inconsistent. Given the discrepancies in these near term action items, how can we make sure that the goal of better coordination is met?

Response. The Federal Interagency Task Force (IATF) has finalized a workplan to track the near-term actions agencies will carry out to implement a subset of actions contained in the Great Lakes Regional Collaboration (GLRC) strategy. We are reviewing these actions, along with the actions outlined in the letter to the President, to coordinate which actions can be accomplished within current funding levels, and which agencies can contribute to completing these actions under current program authorities.

In addition, the GLRC's Executive Committee released a Strategy Implementation Framework on March 16, 2006. The Framework affirms the role of the Executive Committee as the body that will fulfill various roles and responsibilities related to implementing the GLRC Strategy. Among those roles and responsibilities are: (1) identifying and resolving major implementation issues; and (2) facilitating coordination of Great Lakes restoration and protection activities among GLRC participants. In carrying out these responsibilities, the Executive Committee will provide the best forum for identifying opportunities to improve coordination.

RESPONSES BY STEPHEN L. JOHNSON TO ADDITIONAL QUESTIONS FROM SENATOR JEFFORDS

Question 1. Administrator Johnson, what criteria were used to select the 48 near-term actions you cite in your testimony as near-term priorities for the Administration?

Response. In identifying the activities to include on its near-term list, the Administration's intent was to demonstrate a commitment to early action and tangible progress in each of the eight Strategy Team priority areas. Therefore, items on the near-term list address all eight priority areas, and are being initiated in 2006 using existing resources.

Question 2. Administrator Johnson, who will be responsible for monitoring the completion of the 48 near-term actions and will that person have some type of organizational or oversight responsibility for the actions of other Federal agencies?

Response. The President's Executive Order on the Great Lakes provides clear direction to Federal agencies to improve coordination and collaboration on Great Lakes issues through the auspices of the Interagency Task Force and the Regional Working Group. This structure brings the right Federal agencies to the table, at both the national and regional levels, to ensure that our programs are supporting effective and coordinated activities in the Great Lakes basin, and that we are making real environmental progress.

As the Chair of the Interagency Task Force, I have the ultimate responsibility to ensure that the Task Force implements the provisions of the Executive order, and delivers environmental results for the Great Lakes, including the completion of the Interagency Task Force's 48 Near Term Actions. Ben Grumbles, EPA's Assistant Administrator for Water, shares this responsibility as well. In addition, I have designated Gary Gulezian, Director of EPA's Great Lakes National Program Office, as the senior manager in charge of monitoring progress on implementing the Interagency Task Force's 48 Near Term Actions. Mr. Gulezian also serves as Chair of

the Regional Working Group, a role that gives him the capability to engage other Federal agencies in implementing the Interagency Task Force's 48 Near Term Actions and to monitor their progress.

Question 3. Administrator Johnson, have you established measurable interim and final goals against which progress restoring the Great Lakes can be measured? If so, were they established using public input? If you have established interim goals, please submit them for the record.

Response. At this time, interim goals have not been established for the GLRC. The IATF/RWG will be looking at the status of existing goals for the Great Lakes and comparing them to the new GLRC Strategy in order to develop a set of goals that can be measured and reported. The IATF/RWG will also be working with our Canadian partners through the State of the Lakes Ecosystem conference (SOLEC) to measure progress and assess trends associated with the Great Lakes.

Question 4. Administrator Johnson, how will the Administration ensure that the implementation of the Great Lakes Strategy is coordinated, and executed according to priority?

Response. The GLRC's Executive Committee released, on March 16, 2006, a Strategy Implementation Framework. The Framework affirms the role of the Executive Committee as the body that will fulfill various roles and responsibilities related to implementing the GLRC Strategy. Among those roles and responsibilities are: (1) identifying and resolving major implementation issues; and (2) facilitating coordination of Great Lakes restoration and protection activities among GLRC participants. In carrying out these responsibilities, the Executive Committee will provide the best forum for identifying opportunities to improve coordination.

In terms of coordinating Federal efforts related to implementation of the GLRC Strategy, including the Interagency Task Force's 48 Near Term Actions, the Task Force and the Regional Working Group both have key roles. In addition, I have designated Gary Gulezian, Director of EPA's Great Lakes National Program Office, as the senior manager in charge of coordinating implementation of the Interagency Task Force's 48 Near Term Actions.

Question 5. Administrator Johnson, what is the EPA's Assessment of the health of the Great Lakes ecosystem? Please include in your assessment a list and short description of the scientific documents, included peer reviewed studies, on which you base your assessment.

Response. EPA and Environment Canada have been developing, maintaining and implementing a suite of Great Lakes indicators since 1997. An assessment of the status and trends of the Great Lakes basin ecosystem is conducted every 2 years based on the indicator suite, and a comprehensive, peer reviewed report is prepared. The State of the Great Lakes 2005[1] report presents the compilation, scientific analysis and interpretation of data about the Great Lakes basin ecosystem. The report is peer reviewed by distinguished scientists from the United States and Canada participating in the State of the Lakes Ecosystem process. The final report will be issued on June 26, 2006. The information is derived from the combined efforts of many scientists and managers in the Great Lakes community representing Federal, Tribal/First Nations, State, provincial and municipal governments, non-government organizations, industry, academia and private citizens.

Information in the State of the Great Lakes 2005 report was presented to participants at the State of the Lakes Ecosystem Conference (SOLEC), October 6–8, 2004, in Toronto, Ontario. Draft reports were available for public review and comment following SOLEC 2004, and suggested additions, corrections and revisions were considered and incorporated as appropriate. This bi-national peer review process ensured that the data were presented accurately by the report authors, and that the conclusions were supported by the data.

The indicator reports acknowledge the authors and affiliations, give information about the sources for the data, and list relevant peer-reviewed literature, agency reports, or other citations supporting the information presented. The final technical report will be available online on June 26, 2006 at *www.binational.net* and at *http://epa.gov/glnpo/solec/index.html*. Documents currently available are: State of the

[1] State of the Great Lakes 2005 Highlights, EPA 905–F–05–006 U.S. Environmental Protection Agency, and Cat. No. En161–3/2005E Environment Canada, ISBN 0–662–41451–9, Chicago and Toronto.

Great Lakes 2005 Highlights[2] and State of the Great Lakes 2005 Indicator Summaries[3].

RESPONSES BY STEPHEN L. JOHNSON TO ADDITIONAL QUESTIONS FROM SENATOR VOINOVICH

Question 1a. You stated that the Administration is undertaking 48 near-term actions in 2006. Please provide the timetable for implementation of each item on the list.Response.

Interagency Task Force 48 Near Term Actions

Action	Completed/Expected Due Date
Complete analysis for Asian Carp and make listing decision	ASAP
Support Carp Barrier legislation and explore options for long-term operations and maintenance.	FY 2006
Develop action plan to develop inventories, mapping, and treatment of terrestrial invasive species for the GL basin	FY 2006
Test shipboard ballast water treatment technologies aboard a MARAD-owned barge	FY 2006
Perform EPA's validation testing for Ballast Water Treatment Test Protocols.	FY 2006
Develop Aquatic Invasive Species Rapid Response document for State and local natural resource mgrs.	Completed
Create a Rapid Response Subcommittee in the RWG to serve as central point of contact related to aquatic invasive species rapid response efforts in GL basin.	FY 2006
Support a five-yr goal for CSO/SSO communities to complete Long- Term Control Plans.	Ongoing
Issue improved policy guidance on managing peak flows at sanitary plants.	FY 2006
Develop a standardized sanitary survey form for State & local governments and support implementation pilots using the new survey.	FY 2006–2008
Develop revised criteria to evaluate safety of beaches for swimming, and advance pathogen prediction studies for beach closings and harmful algal blooms forecasting.	FY 2006
Develop AWQC for cryptosporidium in source water, criteria will help states & tribes develop standards to ease burdens on water treatment facilities.	FY 2007
W/states, analyze WQS data to determine if WQSs are supportive of a drinking water use for surface water intake systems.	FY 2007
Issue new handbook for Managing Onsite & Clustered Wastewater Treatment Systems.	Completed
Fully maximize & implement the GL Legacy Act.	Completed
AOC–EPA committed $25M to clean up Ohio's Ashtabula River, to be matched by State and local partners.	Completed
AOC–EPA expanded EPA-STATE RAP group to include COE, FWS, and NOAA.	Completed
Support creating a State-Federal-local-tribal Legacy Act coordinating committee.	FY 2006
Evaluate implementation schedule and future directions for Binational Toxics Strategy.	FY 2006
Begin surveillance for emerging chemicals of concern.	FY 2006
Work with partners to initiate a toxic pollution prevention outreach campaign for local & tribes.	FY 2007
Support efforts to develop basin-wide mercury product stewardship strategy.	FY 2007
Support outreach campaign offering alternatives to burning & educate on consequences of burning.	FY 2007
Support efforts of GL Sport Fish Advisory Task Force to develop new fish consumption advisories.	FY 2006
Provide guidance to regional offices asking them to include updated mercury methods in permits with mercury limits.	FY 2006
Develop draft Methylmercury water quality criteria implementation guidance for states.	FY 2007
Support development of several watershed TMDL pilot efforts in regions-pilot planned for GL region.	FY 2007
Feds, states, & NGOs develop wetlands restoration plans to enhance & protect 200,000 acres in the GL basin.	FY 2006
Review Federal wetlands management programs to identify possible improved program coordination.	FY 2007
Expedite processing and review of permits to restore wetlands and other aquatic habitat in the GL basin.	FY 2006
Update National Wetlands Inventory maps for GL wetlands.	Ongoing
Include and implement selected Great Lakes watersheds in the Conservation Security Program.	Ongoing

[2] State of the Great Lakes 2005 Highlights, EPA 905–F–05–006 U.S. Environmental Protection Agency, and Cat. No. En161–3/2005E Environment Canada, ISBN 0–662–41451–9, Chicago and Toronto.

[3] State of the Great Lakes 2005 Indicator Summaries, U.S. Environmental Protection Agency and Environment Canada, Chicago and Toronto.

Interagency Task Force 48 Near Term Actions—Continued

Action	Completed/Expected Due Date
Conduct rapid watershed assessments on critical watershed areas to collect natural resource data and implement results.	FY 2006
Adopt innovative conservation technologies & approaches using Conservation Innovative Grants Program to improve quality of natural resources in basin.	Ongoing
Join others in evaluating effectiveness of conservation practices/systems on improving soil, water quality and related resources to include GL states.	Ongoing
Hold information & education workshops to strengthen watershed protection through improved coordination.	TBD
Convene gathering of State transportation agencies to explore what can be done to reduce storm water runoff in GL region.	FY 2006
Convene a special session at 2006 SOLEC on key indicators related to GLRC strategy recommendations.	FY 2006
Review monitoring programs to ensure effective & efficient gathering & reporting of data.	FY 2007
Under the Regional Data Exchange initiative enhance the collaborative efforts between data managers.	Ongoing
Continue to implement US portion of Global Earth Observation System of Systems and Integrated Ocean Observing System.	Ongoing
Coordinate existing GL National Status & Trends monitoring with other agencies.	Ongoing
Council of GL Research Managers will promote bi-national coordination & prioritization of research activities & implement it in conjunction w/IJC.	FY 2006
Explore ways to consider sustainable practices in reviewing SRF & brownfields programs.	TBD
Explore possibility of GL Green Highways forum with the states.	FY 2007
Review the feasibility of reviewing existing GL grant, loan & subsidy programs & incorporate sustainable criteria.	FY 2006
Encourage application of planning methods that lead to development of sustainable & integrated land use, transportation, & other public infrastructure plans; and encourage Metro Planning Organizations to undertake scenario planning & integrated sustainable development planning & provide technical assistance.	FY 2007
Support establishment of a national Alliance for Water Efficiency in Chicago.	FY 2006

Question 1b. I inserted into the record a letter that I recently received from the Great Lakes governors and mayors. It includes a letter sent to the President on December 12, 2005 proposing a list of near-term action items. Please detail for each item whether you are implementing it, and if not, then why you are not.

Response. As noted, the Administration is implementing the Interagency Task Force's 48 Near Term Actions within existing resources. Several of these near-term actions were included in the December 12, 2005 letter to the President from the Great Lakes governors and mayors. In addition, the Administration is continuing work on many of the other requested actions within current resources.

Question 2. You mentioned the Asian carp barriers in the Chicago Sanitary and Ship Canal as a priority. Last Congress, we worked hard to get language passed to provide the Army Corps of Engineers with more funding to construct the second barrier. We have heard about more problems recently with the continued operation of the first barrier. I inserted into the record a letter that Senator Obama and I sent in December with over 40 members in the House and Senate. We have included provisions in WRDA but have yet to move that bill through the Senate. Please provide for the record a detailed update on this project and what the Administration is doing about it.

Response. The Administration is committed to working with Congress and nonfederal entities, as appropriate, to halt the spread of invasive species between the Great Lakes and the Mississippi River Basin.

As you know, the Chicago Sanitary and Ship Canal (CSSC) is a man-made waterway that connects the Chicago River and the Des Plaines River, which creates a connection between Lake Michigan and the Mississippi River. A demonstration dispersal barrier has been operating in the CSSC since April 2002. The permanent barrier (Barrier II) is needed to provide more permanent protection against invasive species. Barrier II will again be an electric field barrier, but will include design improvements identified during monitoring and testing of the demonstration barrier and be capable of producing a more powerful electrical field.

Barrier II is being constructed in two phases. Construction of the first phase (Barrier IIA) is complete and it is now undergoing startup and safety testing. This phase consists of construction of two underwater electrode arrays and one control house. This control house will be able to operate one of the two arrays. It cannot be oper-

ated at full strength until the safety testing results are approved by the Coast Guard, expected by the end of June 2006.

The second phase (IIB) consists of construction of a second control house that will allow both arrays to be operated at the same time. The non-federal sponsor is the Illinois Department of Natural Resources (IDNR). The sponsor and others believe the project is of regional importance and should become a full Federal responsibility. The navigation industry is concerned that the barrier may be unsafe for passing barge tows and their crews. Safety testing will be completed in coordination with the U.S. Coast Guard to address these concerns.

Final design of Barrier IIB will be completed within FY 2006. Construction of IIB would not begin until final costs from Barrier IIA have been verified and final contract negotiations completed for Barrier IIB. Upon availability of funds, Barrier IIB construction would likely take 6 months.

Question 3. You detail some of the funding in the President's budget for Great Lakes programs. While you mention increases, I understand that the President's budget decreases funding in other key areas, such as the Great Lakes National Program Office, Great Lakes Fishery Commission, and several corps projects. Please provide for the committee a cross-cutting budget analysis for FY 2007 detailing increases and decreases for all of the Federal programs that impact the Great Lakes.

Response. A cross cutting budget analysis has not been undertaken at this time.

Question 4a. The "Report to the President on the Implementation of the Great Lakes Executive Order" stated that the Great Lakes receive $500 million annually in Federal funds for restoration. Please list the programs and amount of funds that go towards Great Lakes restoration annually.

Response. Relevant information from the Report to the President on the Implementation of the Great Lakes Executive Order is attached. It contains the programs and funding levels that were included in the $500M estimate. See Attachment A.

Question 4b. How did the Great Lakes Interagency Task Force determine which programs relate to the Great Lakes? What criteria were used to determine whether to include a program or not?

Response. The Task Force included three levels of information in its assessment. Level 1 contains quantitative data on programs that have a direct impact on the water quality of the Great Lakes. Level 2 includes qualitative descriptions of programs that lack a direct water quality connection, but are more broadly beneficial to the Great Lakes ecosystem. Level 3 includes qualitative descriptions of programs that lack clear water quality and broader ecosystem benefits, but are beneficial to the Great Lakes region.

Question 4c. How did the Interagency Task Force determine how much funding from national programs benefited the Great Lakes ecosystem? Did the Task Force evaluate whether funding, particularly funding through the Clean Water State Revolving Fund and the USDA's Natural Resources Conservation Service programs, was spent within the Great Lakes basin?

Response. In cases where national programs were included in the Task Force report, the Task Force attempted to break out from the national totals the resources directed to the Great Lakes basin.

For example, expenditures in the relevant United States Department of Agriculture (USDA) conservation programs are tracked in a way that can differentiate between in-basin and out-of-basin expenditures. For some programs however; e.g. EPA's Clean Water State Revolving Fund, expenditure data exist only at the statewide level, and those are the numbers that were included in the report.

Question 5. In your role as Chair of the Federal Great Lakes Interagency Task Force, what are your plans for integrating and improving the multiple Federal wetlands protection programs which are spread out over a number of agencies so that the President's goal of restoring 3 million acres nationally over 5 years is achieved?

Response. The IATF/RWG is developing a subcommittee of Agencies that administer wetlands programs to work on improving coordination, as well as implementing and tracking the wetlands related activities in the list of the Interagency Task Force's 48 Near Term Actions committed to by the Administration. These activities include:

- The Federal Government will join the States in an equally shared effort to develop wetlands restoration plans that will enhance, and protect a total of 200,000 acres.
- The Army Corps of Engineers and EPA will work with the other Federal agencies in the Interagency Task Force and States to expedite the processing and review of permits for projects to restore wetlands and other aquatic habitat in the Great Lakes Basin.

• The Administration will continue to update the National Wetlands Inventory as scheduled, which will provide valuable information about Great Lakes wetlands.

Question 6. What are the next steps for the Collaboration? What is the Federal Government's role?

Response. The next steps for the Great Lakes Collaboration are to work with partner Agencies and others to ensure that high priority actions identified in both the Federal Near Term Action plan, including the Interagency Task Force's 48 Near Term Actions, as well as the priority actions identified by the other members of the GLRC, are implemented taking into consideration current fiscal constraints. The IATF and RWG will work to improve the efficiency and effectiveness of ongoing programs and actions in the Great Lakes with an emphasis on improving coordination and managing toward environmental results.

Question 7. How is EPA orchestrating this effort at the Federal, state, and local level? Who is in charge of coordinating the day-to-day Great Lakes restoration activities?

Response. The primary forum for orchestrating Federal programs and activities is the IATF/RWG. The Agencies are represented on the Executive Committee of the GLRC by the Chair of the IATF. States, Tribes and municipalities also are represented on the Executive Committee, and numerous other stakeholders are involved as well.

Within EPA, the Great Lakes National Program Office, in close coordination with the Office of Water, is providing day-to-day support in carrying out coordination and support to a wide variety of these efforts. In addition to these efforts, there are other coordination forums within the Great Lakes, such as the Binational Executive Committee, the U.S. Policy Committee, the Great Lakes Fishery Commission, and the International Joint Commission, that serve to coordinate, or act as a clearinghouse for programs or information at the binational, as well as national or basin-wide, levels.

Question 8. How can we better coordinate Great Lakes programs at all levels of government so that we are more efficient and effective?

Response. On March 16, 2006, the GLRC's Executive Committee released a Strategy Implementation Framework that, among other things, affirms the role of the Executive Committee as the body that will fulfill various roles and responsibilities related to implementing the GLRC Strategy. One of the key responsibilities is to facilitate coordination of Great Lakes restoration and protection activities among GLRC participants. In carrying out these responsibilities, the Executive Committee will provide a forum for all levels of government to identify opportunities to improve coordination.

Regarding what the Federal Government can do in particular, the President's Great Lakes Executive Order directs the IATF to improve coordination and management of Great Lakes programs in nine specific areas. Implementing the order will help to ensure that Great Lakes programs are directed at the most significant problems in the Great Lakes, that there is no duplication of effort, and that programs are well coordinated and accomplishing results.

The IATF already has identified two key opportunities for improved coordination—Federal wetlands programs and aquatic invasive species rapid response. The Task Force has directed the Regional Working Group to create two subcommittees to address these issues, and call letters will be sent to IATF agencies soon to solicit participation.

RESPONSES BY STEPHEN L. JOHNSON TO ADDITIONAL QUESTIONS FROM SENATOR OBAMA

Question 1. Does the President support the recommendations of the Regional Collaboration? If so, then why has the Administration requested such a small increase in resources to implement these recommendations?

Response. The Administration is committed to the restoration of the Great Lakes, and to using the GLRC Strategy to guide its future restoration and protection efforts in the basin. As the Great Lakes Interagency Task Force's 2005 Report to the President on Implementation of the Great Lakes Executive Order cites, the Federal Government spends approximately half a billion dollars annually to improve water quality in the Great Lakes region. The Administration already is moving forward within its current budget to implement the Interagency Task Force's 48 Near Term Actions that respond to all eight priority issues identified in the Collaboration Strategy.

Question 2. Since you are the chair of the Federal Task Force, what specific actions can we expect the Task Force to take in 2006 and 2007?

Response. The Task Force is moving forward actively to implement the 48 Near Term Actions it committed to after the release of the GLRC Strategy. All of the actions will be initiated in 2006 and are scheduled for completion no later than FY08, except in the case of several ongoing actions. In addition, the Task Force is implementing the other provisions contained in the Great Lakes Executive Order. The Task Force recently completed a work plan, which will allow it to track its progress in implementing both the 48 Near Term Actions and the other provisions of the Executive order. The work plan activities are all possible within existing resources.

Question 3. By definition, the Task Force is Federal in nature. What are you willing to do to ensure the state, tribal, and local governments play a more equal role in setting priorities and determining how Federal resources are utilized?

Response. The IATF will work to include all relevant state, tribal and local government partners as it works within existing resources to improve efficiency and effectiveness of current programs, and to implement the Interagency Task Force's 48 Near Term Actions committed to by the Administration.

Appendix E

Federal Great Lakes Budget and Program Inventory

Introduction

As part of the Great Lakes Interagency Task Force's Report to the President on implementing Executive Order 13340, the Great Lakes Budget and Program Inventory (the Inventory) is designed to demonstrate the broad scope of the Federal government's involvement in the Great Lakes region. In addition, the Inventory serves as an informational tool to help Federal departments and agencies implement components of the Executive Order (EO). The EO contains several provisions to improve coordination of the more than 140 Federal programs that help fund and implement environmental restoration and management activities throughout the Great Lakes region. This information will provide a broad snapshot of the Federal government's commitment to the Great Lakes and will help the Interagency Task Force and Regional Working Group to coordinate resources to ensure that funds are being directed to the highest priorities.

The Inventory consists of three levels of information. Level 1 contains quantitative resource data about programs that have a direct impact on the water quality of the Great Lakes. Examples of Level 1 programs include: the Environmental Protection Agency's Great Lakes Legacy Act program; the Department of Agriculture's Environmental Quality Incentives Program; and the National Oceanic and Atmospheric Administration's Coastal Zone Management grant program.

Level 2 includes qualitative descriptions of programs that lack a direct water quality connection, but are beneficial to the Great Lakes ecosystem more broadly. Examples include: the U.S. Department of Agriculture's Wildlife Habitat Incentives Program (under the Natural Resource Conservation Service) and Forestry Research (under the U.S. Forest Service); the Department of the Interior's Great Lakes Exotic Plant Team (under the National Park Service), the Migratory Birds program (under the U.S. Fish & Wildlife Service), and Geographic Analysis and Monitoring (under the U.S. Geological Survey); and the Department of Transportation's Wetlands and Wildlife Mitigation program (under the Federal Aviation Administration).

Level 3 includes qualitative descriptions of programs under the agencies and departments identified in the EO that lack clear water quality and broader ecosystem benefits, but are beneficial to the Great Lakes region. Examples of Level 3 programs include the U.S. Army Corps of Engineers' Great Lakes Navigational System, the Department of Homeland Security's Domestic Fisheries Enforcement program (under the U.S. Coast Guard), and the Environmental Protection Agency's Brownfields program.

Level 1 – Great Lakes Water Quality Funding

This table lists the Fiscal Year (FY) 2004 Enacted funding levels for programs of the nine Executive Order departments and agencies which directly benefit Great Lakes water quality. Cumulatively, these Federal programs invested over half a billion dollars in FY 2004 funds to improve water quality in the Great Lakes.

Great Lakes Water Quality Crosscut

(Dollars in Millions)

	FY 2004 Enacted
DEPARTMENT OF AGRICULTURE (USDA)	
Farm Service Agency	
Conservation Reserve Program	$64.1
Forest Service	
Capital Improvement and Maintenance	$6.0
Forest Legacy	$3.0
Forest Stewardship	$6.0
Knutsen-Vandenberg Fund	$1.0
Land and Water Conservation Fund	$1.0
National Forest System	$1.0
Roads and Trails Fund*	$1.0
Natural Resources Conservation Service	
Conservation Operations	$38.0
Environmental Quality Incentives Program	$38.0
Great Lakes Basin Program	$3.0
Watershed and Flood Prevention Operations	$1.0
Wetlands Reserve Program	$19.0
Rural Development	
Water / Wastewater Loans and Grants	$34.0
Subtotal, USDA	**$216.1**
DEPARTMENT OF THE ARMY	
Army Corps of Engineers	
Aquatic Ecosystem Restoration	$3.5
Aquatic Plant Control Research	$0.2
Beneficial Use of Dredged Material	$0.1
Dispersal Barrier Demonstration	$0.7
Environmental Dredging	$1.3
Environmental Infrastructure	$7.6
Great Lakes Fishery and Ecosystem Restoration	$0.7
Planning Assistance to States	$0.6
Remedial Action Plan Assistance	$1.0
Restoration of Environmental Quality	$2.0

Sediment Transport Models	$1.0
Wetlands Permitting	$10.8
Subtotal, Corps	**$29.4**
DEPARTMENT OF COMMERCE	
National Oceanic and Atmospheric Administration	
Ballast Water Demonstrations	$0.5
Coastal Zone Management Grants	$14.0
Great Lakes Environmental Research Laboratory	$8.7
Great Lakes Satellite Remote Sensing Program (CoastWatch)	$0.1
National Center for Coastal Ocean Science - ECOHAB	$0.1
National Center for Coastal Ocean Science – MERHAB*	$0.0
National Center for Coastal Ocean Science - Natl. Status and Trends*	$0.0
NMAO charter vessel for Algal Bloom projects*	$0.0
NMAO charter vessel for Sea Grants projects*	$0.0
Nonpoint Pollution Control Implementation Grants	$1.2
Oceans and Human Health - NOAA Center of Excellence	$2.1
Old Woman Creek National Estuarine Research Reserve	$1.0
Sea Grants to Great Lakes States	$11.0
Weather and Air Quality Research / Air Resources Laboratory	$0.1
Subtotal, Dept. of Commerce – NOAA	**$38.8**
ENVIRONMENTAL PROTECTION AGENCY (EPA)	
Office of Air and Radiation	
Great Waters Program	$1.0
Section 105 Clean Air Grants	$1.0
Office of Research and Development	
Invasive Species Research	$0.5
Office of Water	
Clean Water State Revolving Fund	$154.0
Great Lakes Legacy Program	$10.0
Great Lakes National Program Office	$15.0
Great Lakes Remedial Action / Lakewide Management Plans	$3.0
Section 106 Clean Water Grants	$15.0
Section 319 Nonpoint Source Grants	$7.0
Targeted Watershed Grants	$1.0
Water Quality Cooperative Agreements	$0.0
Wetlands State Grants	$1.0
Subtotal, EPA	**$208.5**
DEPARTMENT OF HOMELAND SECURITY	
Coast Guard	
Domestic Fisheries Enforcement	$0.1
Marine Environmental Protection	$3.7
Oil Spill Response and Claims	$1.4

Subtotal, CG	**$5.2**
DEPARTMENT OF THE INTERIOR (DOI)	
Fish and Wildlife Service	
Habitat Restoration Projects	$1.0
National Wildlife Refuge System	$8.7
U.S. Geological Survey	
Bioinformatics	$0.9
Contaminant Biology Program	$0.3
Cooperative Water Program	$3.6
Ecosystem Program	$1.2
Fisheries Program	$2.3
Ground Water Resources Program	$0.2
Global Climate Change Program	$0.2
Hydrologic Networks and Analysis	$0.1
Invasive Species Program	$0.4
National Streamflow Information Program	$0.2
National Water Quality Assessment Program	$1.9
Status and Trends of Biological Resources Program	$3.0
Toxic Substances Hydrology	$0.4
National Park Service	
Competitive Park Projects (Water Management Plans)	$0.2
Vital Sign Water Quality Monitoring	$0.3
Subtotal, DOI	**$24.9**
DEPARTMENT OF STATE (STATE)	
Western Hemisphere Affairs Bureau	
International Joint Commission	$1.0
Subtotal, State	**$1.0**
TOTAL, ALL AGENCIES	$523.9

*indicates program funding level is less that $100k

STATEMENT OF BOB TAFT, GOVERNOR, STATE OF OHIO, ON BEHALF OF THE COUNCIL OF GREAT LAKES GOVERNORS

Mr. Chairman and members of the committee, thank you for the opportunity to appear before you today.

The Great Lakes community has reached an amazing milestone. Fifteen hundred people representing States, cities, tribes, the Federal Government, environmental, business and agricultural organizations came together in an unprecedented effort to create the Great Lakes Regional Collaboration Strategy, a blueprint for action to restore and protect the Great Lakes.

Now that planning is complete, it is time to act. But there are barriers to implementation, and we need your help to surmount them. While the Collaboration members are moving forward on a number of actions using existing resources, significant policy and funding impediments remain. Without your support in this critical first year, there is a danger that the plan will be for naught and our momentum will be undermined.

That would be tragic, because the Great Lakes remain threatened by emerging environmental threats, such as the introduction of a new invasive species every 8 months, and by historical problems such as contaminated sediments. A lack of sufficient coordination and focus among existing programs is also hindering progress.

Congress can help:

• By tackling problems that must be addressed on a regional or national level such as the control of invasive species;

• By modifying the way funds are directed to Great Lakes priorities to improve coordination; and

• By appropriating funds to address the most pressing environmental needs as part of the current budget.

Let me briefly address each of the areas in which we seek your assistance.

Invasive species pose perhaps the greatest threat to the Great Lakes in a generation. We urge you to pass the National Aquatic Invasive Species Act.

In some areas, most notably wetlands restoration, a multiplicity of Federal programs with differing requirements complicates effective use of resources. In the Great Lakes Environmental Restoration Act (S 508), Senators Levin and DeWine have identified a promising mechanism for directing funds toward priority needs. By funding priorities rather than programs, Congress can effectively channel the work of Federal, State and local agencies toward key objectives.

We applaud all the bill's sponsors and join their call for long-term, large scale funding through a reformed process. But this will take time. That is why we ask that you fund key actions in this budget.

We particularly ask for your support of the following:

• Fund completion and operation of two permanent dispersal barriers in the Chicago Sanitary and Ship Canal to keep the Asian carp out of the Great Lakes. It will cost $6 million to protect the Great Lakes fishery, a small fraction of its $4 billion economic value.

• Support the President's request for the Great Lakes Legacy Act to be funded at $49.6 million if not the full $54 million authorized level. In Ohio, we are thrilled by the U.S. EPA decision to use funds from the Legacy Act to clean up contaminated sediments in the Ashtabula River. Similar success stories in other Great Lakes States can be realized if Congress agrees to the President's request.

• Provide an additional $50 million to U.S. EPA's brownfield program to clean up abandoned industrial waterfront properties in the Great Lakes basin. The economic return in our coastal cities can be tremendous. For example, a $3 million Clean Ohio Fund grant at an abandoned manufacturing site in Sandusky is generating $37 million in private investment in housing, retail, and outdoor recreational access.

• Finally, support the President's commitment to restore 200,000 acres of wetlands in the Great Lakes basin by appropriating $28.5 million. To ensure these resources are used efficiently, we also ask that you join us in encouraging the Federal Interagency Task Force to consolidate many Federal wetland programs.

These first steps in implementing the Strategy will help fulfill our moral obligation to preserve this natural treasure for future generations. Another reason we must act is that the Great Lakes are vital to the economic health of the Nation. Nearly 29 percent of our nation's gross domestic product is produced by the Great Lakes States, including approximately 60 percent of all U.S. manufacturing. Shipping and tourism also produce significant economic activity, as others will testify here today.

One problem in particular illustrates the link between environmental restoration and economic viability. As Senator Voinovich knows, the Army Corps of Engineers annually dredges Toledo Harbor to maintain navigation. Sediments have been dis-

posed in the shallow western basin, stressing the most productive fishery in the entire Great Lakes.

We reached agreement with the corps to cut back on open lake disposal and eliminate it entirely by 2012, using the dredged material for a habitat restoration project. Ohio will provide the non-Federal match and together, we will turn a negative into a positive. This can be a striking example of collaborative success.

However, the agreement is seriously imperiled because the feasibility study did not qualify for funds under section 204 of the Water Development Appropriations Act in Federal fiscal year 2006. The corps needs $1.2 million for this study. I ask that you specifically name this project in the 2007 appropriations bill.

The lack of priority funding for this study parallels the lack of funds allocated to the dispersal barrier I mentioned moments ago. Projects like these are key in our attempts to protect and improve the Great Lakes, require a small investment relative to the damage they promise to prevent, and need to be given serious consideration at the Federal level.

The matter is made more urgent by the fact that across Lake Erie, an average of 4 years of disposal capacity remains for navigation channel dredging. This looming crisis will force us to choose between dredging to support shipping, and open lake dumping to the detriment of the Lake and its fishing and boating industries.

The Great Lakes Regional Collaboration is needed to address emerging problems such as this, to oversee implementation of its Strategy, and to continue its collaborative work on behalf of Great Lakes restoration. We would welcome congressional action to codify both the Collaboration and the Federal Interagency Task Force.

Collaboration members are actively working to identify areas in which all levels of government can coordinate efforts toward clearly defined goals. While I have spoken today of how Congress can help, be assured that the Great Lakes States and the other stakeholders remain committed to doing our share to protect and preserve our greatest natural resource.

RESPONSES BY BOB TAFT TO ADDITIONAL QUESTIONS FROM SENATOR INHOFE

Question 1. The Strategy establishes funding levels for each of its goals. However, there seems to be some disagreement as to who will be providing those funds. In your view, how much of the $20 billion in the Great Lakes Strategy do you expect from the Federal Government, the State governments, and the local governments?

Response. The Great Lakes Regional Collaboration Strategy contains roughly 40 recommendations, the total cost of which is approximately $20 billion. The partners agree that the Strategy clearly defines the challenges facing the Great Lakes, and that prompt action to address those challenges is imperative. While the Strategy includes many excellent recommendations for doing so, alternate approaches may prove equally effective. To view the Strategy as a definitive list of projects with a firm price tag would be a misinterpretation. Rather, the Executive Committee of the Collaboration has described the Strategy as a guide to future actions to protect and restore the Great Lakes.

The non-federal Collaboration partners have been clear throughout this process that each party must contribute its share if restoration efforts are to succeed. There are many instances in which State and local governments, as well as private sector partners, are currently contributing financially and expect to continue to do so. States and other non-federal interests currently provide 25 percent–60 percent of project costs through a wide range of existing authorizations ranging from U.S. Fish and Wildlife Service to U.S. EPA, the Army Corps and NOAA. Increased Federal appropriations would be followed by increased nonfederal investments.

Among the current State and local government investments are:

• The non-federal match for Great Lakes Legacy Act projects to remove contaminated sediments is 35 percent. Assuming that the President's request for $49.6 million in Legacy Act funding is supported in Congress, the non-federal match would amount to nearly $17.5 million in FY 2007, and by extension $87.5 million if that funding level were sustained over the 5-year timeframe of the Strategy. In addition, States and local entities spend millions to evaluate these sites and design the restoration projects before applying for Legacy Act support. Further, the non-federal match may exceed 35 percent, as it does for the project getting underway in the Ashtabula River, where the State of Ohio and local entities are providing $25 million to match the $25 million investment from the Legacy Act.

• The States operate numerous programs to reduce nonpoint source loadings including: Clean Water Act (CWA) Section 319 projects, which generate a non-federal match of approximately 40 percent; CWA state revolving fund assistance for a variety of nonpoint source projects; agricultural and urban runoff management; imple-

mentation of best management practices (BMPs); conservation programs; shoreline and streambank stabilization programs; priority stream, lake and watershed programs; stormwater runoff permit programs; animal feedlot operation controls; biosolids programs; nutrient management programs; erosion and sediment control programs; contaminated sediment remediation projects; and others. Great Lakes States' expenditures range from $889,000 to $10,575,000 annually. A conservative estimate for eight State expenditures for these important nonpoint source programs might be $20 million to $30 million annually. In Ohio alone, the State Revolving Loan (SRF) awarded $5.2 million for BMP loans, and $12.3 million—with no repayment requirements—for stream restoration and protection.

• The largest single expense identified in the Collaboration Strategy is the cost of wastewater infrastructure. This reflects the national situation; Ohio has collected documentation to support an estimate for State needs in 2004 of more than $12.9 billion, an increase of 50 percent from the last survey in 2000. Approximately $6.9 billion of that amount is for combined sewer overflows.

Currently, the States provide a 20 percent non-federal match for the capitalization grants which fund the State Revolving Loan Funds. The States strongly support the $2 billion national funding level recommended in the Great Lakes Collaboration Implementation Act for FY 2007, and stand ready to provide the necessary non-federal match. In addition, it should be noted that local governments ultimately bear the cost of wastewater infrastructure. Although the SRF program provides great assistance via loans at less than market rate, they are loans nonetheless and are repaid by local governments and their ratepayers. In Ohio alone, we estimate the cost of eliminating sewer overflows within the Lake Erie basin at $3 billion.

These are only a few examples of State and local spending on the Great Lakes. The GAO has reported that the States currently outspend the Federal Government on Great Lakes programs by a wide margin. The Great Lakes States administer 51 programs funding restoration in the Great Lakes Basin. A Policy Solutions, Ltd. report prepared for the Council of Great Lakes Governors in 2004 showed that the Great Lakes States reported spending a total of $4,963,235,314 for restoration from FY92-04 in multi-year funding programs. In addition to this spending that is directed through multi-year funding programs, the Great Lakes States spend an estimated $24,945,260 annually on other programs in support of the Governors' nine priorities for restoration and protection. For more information, the complete report is available online at *http://cglg.org/projects/priorities/PolicySolutionsReport12-10-04.pdf*

Question 2. The near-term actions outlined by the Council of Great Lakes Governors and the Great Lakes and St. Lawrence Cities Initiative in a letter sent to the President on December 12, 2005 and the near-term actions developed by the Administration are inconsistent. Given the discrepancies in these near-term action items, how can we make sure that the goal of better coordination is met?

Response. To ensure better coordination, the Great Lakes Regional Collaboration and the Federal Interagency Task Force should be made permanent in law so that lines of communication can remain open through these important avenues. Although the Collaboration Executive Committee and the Federal Interagency Task Force have not reached complete agreement, they have proven to be valuable means of exploring issues.

The Great Lakes Governors favor the adoption of a collective problem solving model. Political leadership as represented on the Executive Committee of the Great Lakes Regional Collaboration should set interim goals for addressing the items outlined in the Great Lakes Strategy. Technical experts from all levels of government should work together to create plans to meet each of those goals, and then work with Congress, State legislatures, Tribal and municipal governments, and the private sector to obtain funding to carry out the plans.

One reason that the near-term action items developed by the Federal agencies differ from those of the other Collaboration partners is that those agencies cannot by law advocate for increased funding before Congress, and through the Federal Interagency Task Force they have chosen to focus on the use of existing resources. As we stated in our November 1 letter to the Administration, the Great Lakes Governors share the goal of accomplishing greater results with existing resources. We also share the overwhelming view of our Collaboration partners that Federal resources must be increased in the FY 2007 budget to better restore and protect Great Lakes. Therefore, in the near-term, we call on Congress to help fund the near-term action items outlined by the Great Lakes Governors and Mayors in our December 12, 2005 letter to the President.

Question 3. Please provide documentation detailing the roles of the States and local authorities and their contributions to this restoration process, including funding each will provide to meet the objectives outlined in the restoration strategy.

Response. Invasive Species.—The State of Ohio has authority under State law to restrict importing, exporting, selling and possession of injurious species. Ohio completed an aquatic nuisance species plan in 1997 which is now under revision. We have been unable to meet many of the goals under the plan due to a lack of funding. Most States rely on the funding authorized under NAISA to fund invasive species programs.

The States estimate that they are devoting more than $3.5 million annually to the control and prevention of invasive species in the Great Lakes. Industry and municipalities in the Great Lakes basin spend roughly $70 million annually on removing zebra mussels from water intakes.

Coastal Health.—The authority to control Combined Sewer Overflows and Sanitary Sewer Overflows (CSOs and SSOs) comes from the delegated permitting authorities to the States in the Clean Water Act. Elimination of sewage overflows to the Great Lakes and their tributaries is a region-wide need and the most direct means of improving coastal health.

In Ohio's Lake Erie basin, there are 35 small communities (less than one million gallons per day treatment plant) with CSOs and 29 large communities (more than one million gallons a day treatment plant) with CSOs. Each of these 64 communities will invest significant infrastructure funding (totaling billions) over the next 15 to 20 years to meet the requirements of their Long Term Control Plans to address this source of discharges to the Lake Erie basin. At this time, we do not have a precise total for this list of communities.

The State of Ohio Lake Erie Protection Fund is currently providing nearly $150,000 for research into fecal contamination at beaches. The Ohio Water Development Authority is currently providing $335,000 for research into fecal contamination at beaches.

Areas of Concern/Contaminated Sediment.—Areas of Concern (AOC) are the most polluted rivers and bays around the Great Lakes where the objectives of the bi-national Great Lakes Water Quality Agreement (Agreement) are not being met. These sites were proposed by the States and identified as such by the International Joint Commission in 1985. The 1987 amendments to the Agreement call for the preparation of Remedial Action Plans (RAP) for each of the AOCs that look at all components of the ecosystem. Each plan was to include an assessment of the environmental problems and their causes, an evaluation of remedial measures already in place as well identification of the additional remedial actions needed, implementation of those actions, and monitoring to ensure that the remedial actions had restored the AOC. The Agreement further stated that the Federal Government would cooperate with State governments to develop RAPs and ensure the active involvement of the public. The Great Lakes Critical Programs Act of 1990 amended the Clean Water Act to include the development of RAPs. In most AOCs, either local coordinating committees or public advisory committees were established to work with the States to implement the RAP program. This is important to note because many of the actions needed to restore the AOCs must be implemented by local agencies or by raising public awareness to voluntarily adopt more environmentally friendly behaviors in day to day actions.

Throughout the history of the RAP program, some level of Federal funding has been available to assist the State and local agencies in planning and implementing RAP program remedial actions. This funding was authorized under Section 104 (b)(3) of the Clean Water Act. This amount has fluctuated widely, but largely funded critical staff support and smaller remedial actions. The States and local RAP committees have relied on pursuing grants from a number of Federal and State programs, with the local committees also obtaining support from private foundations, dues, donations and fundraising activities. No long-term records have been kept reflecting how much funding has been Federal, State or local, but this ratio would vary greatly from State to State as well as RAP to RAP. However, most Federal or State grants require anywhere from a 5 percent to 50 percent local match which is often provided by the local community. The value of volunteer participation cannot even begin to be estimated.

The Great Lakes Critical Programs Act also authorized a program to begin assessment and remediation of contaminated sediments. Through this effort, the extent of sediment contamination was identified along with the need for a focused, dedicated program to direct remediation. This led to the passage of the Great Lakes Legacy Act in 2002, which carried at least a 65/35 Federal/local cost-share requirement. To date, four projects are underway or completed at a cost of $42 million Federal and $34.2 million state/local match.

Toxics.—A main focus of the Great Lakes Water Quality Agreement is the reduction or virtual elimination of toxic substances. The Clean Water Act holds a similar goal. The main program to regulate point source discharges of pollutants is the National Pollutant Discharge Elimination System (NPDES) program. Authority for implementation of this program has been delegated to the States from U.S. EPA. The Great Lakes Critical Programs Act of 1990 amended Section 118 of the Clean Water Act to devise water quality guidance for the Great Lakes system that conformed to the objectives and provisions of the Great Lakes Water Quality Agreement. Known as the GLI (Great Lakes Initiative), the initiative provided guidance to the Great Lakes States to develop minimum water quality standards, anti-degradation policies and implementation procedures to further restrict release of persistent toxic substances and their impacts on human health, aquatic life and wildlife. Efforts to ensure enforcement of these standards in NPDES permits are ongoing. As an example of the state/local commitment, Ohio invested over $1 million to follow the GLI and adopt the revised water quality standards and associated policies. Each local permitted facility had to revise treatment efforts or monitoring requirements to meet the new discharge standards.

The requirements of the Great Lakes Water Quality Agreement also led to the development of the Bi-national Toxics Strategy. The United States, Canada, States and Provinces worked to devise efforts to reduce the presence and discharge of persistent bioaccumulative substances. Mercury and PCB are high on the list, and efforts are focused on controlling discharge (the discharge of PCBs is banned) as well as sponsoring recycling efforts on a household and industry basis to collect and dispose of equipment or items that contain these substances.

Nonpoint Source Pollution.—The authorities for the States to control nonpoint source pollution comes the Section 319 program in the Clean Water Act. In addition, there are a variety of State and local authorities depending on the jurisdiction. The Section 319 program provides grants to the States and requires a state/local match of 40 percent. The States provide some of the match with the remainder provided by the local projects receiving grant funding.

Section 319 Program: Ohio receives approximately $6 million in Federal funds from the Section 319 program and matches this grant with $4 million (approximately $1 million from the State of Ohio and $3 million from local entities). Each year the amount directed towards projects in the Lake Erie basin varies depending on the local projects. Approximately 20 percent of the Ohio Section 319 program is directed towards projects in the Lake Erie basin.

Conservation Reserve: Through the Lake Erie Conservation Enhancement Program (CREP), Ohio has a goal to enroll 67,000 acres in conservation practices over a 10-year period. As of March, 2005, 34 percent of this goal was realized. An investment of nearly $6 million in State funds has helped generate nearly $15 million in in-kind contributions. Projects include 1,800 acres of wetland restoration; 14,300 acres of filter strips; 1,500 acres of riparian forest buffers; and 1,500 acres of field windbreaks.

Watershed Coordinators: Ohio EPA and ODNR have jointly created the Watershed Coordinator Grant Program, through which full time watershed coordinators are working to develop and implement watershed action plans in the Maumee River, Duck and Otter Creeks, the Sandusky River, Euclid Creek, the Grand River, and the Chagrin River watershed. State and local resources contribute approximately half the annual $240,000 cost of the program.

Soil and Water Conservation Districts: The State provides approximately $4 million in matching funds annually to the Soil and Water Conservation Districts in the Lake Erie Basin. They assist landowners with conservation practices, and provide community education regarding soil erosion prevention and water management.

RESPONSES BY BOB TAFT TO ADDITIONAL QUESTIONS FROM SENATOR JEFFORDS

Question 1. Governor Taft, can you describe the effect that the significant budget cuts in clean water spending proposed by the President will have on your State's ability to meet water infrastructure needs?

Response. In FFY 2004, Congress provided $1.35 billion nationally to capitalize the State Revolving Loan Fund (SRF). Funding levels have been dropping since that time. For Ohio, the proposed funding level in the President's FFY 2007 budget equates to an almost 50 percent reduction over the FFY 2004 level.

Specifically for FFY 2007, the President's proposed budget would result in $37.2 million reduction in Federal support for the SRF. For 2007 alone, including interest the toal loss to the program would be over $50 million. Since Ohio expands its funding capacity by issuing bonds based on the Federal dollars provided, we lose $2 to

$3 for every dollar cut. Therefore, the total loss in SRF leveraging capacity of $100 million to $150 million per year.

Over the past several years, as a result of our leveraging of funds, Ohio's SRF program has been able to fund all projects requested by local governments. Due to reduced capitalization levels, we will no longer be able to do so. In 2007, we expect to reduce our available funding by approximately $200 million a year due to recent capitalization trends. We will also likely limit the amount larger communities can borrow to a small fraction of their requests, and we expect to run out of funding before all projects are funded.

Question 2. Governor Taft, do you have any comments on the effectiveness of EPA programs for assistance to the States and Tribes for water quality issues?

Response. Ohio generally concurs with the findings of the April 2003 "GAO Report on the Great Lakes—An Overall Strategy and Indicators for Measuring Progress." While U.S. EPA has a number of programs designed specifically to address a particular environmental issue (regulating point source discharge, reducing nonpoint source pollution, watershed planning, Superfund cleanups, remediation at hazardous waste sites, monitoring, Total Maximum Daily Load studies, etc.) there is no overarching plan to tie together those strategies and program activities to attain and measure any large scale ecosystem restoration.

Programs that provide funding assistance to States often compete against each other to obtain a slightly different goal. An example is the requirements under Section 303(d)(1)(A) of the Clean water Act (focused on determining and reducing critical loadings), guidance to develop watershed plans under Section 319 of the Clean Water Act (focus on nonpoint sources), the development of Remedial Action Plans to provide an ecosystem approach to restoring the Great Lakes Areas of Concern, and the development of Lakewide Management Plans (LaMPs) to address each Great Lake. All of these programs have the same goal of attaining fishable, drinkable and swimmable conditions in all water bodies, but they are just different enough to require totally separate administrative and implementation structures. The requirement of many Federal grant programs to be bid competitively does not always allow for the funding of the highest priority projects that might make the most measurable difference.

RESPONSES BY BOB TAFT TO ADDITIONAL QUESTIONS FROM SENATOR VOINOVICH

Question 1. How much funding are the States contributing to Great Lakes restoration?

Response. The GAO has reported that the States currently outspend the Federal Government on Great Lakes programs by a wide margin. The Great Lakes States administer 51 programs funding restoration in the Great Lakes Basin. A Policy Solutions, Ltd. report prepared for the Council of Great Lakes Governors in 2004 showed that the Great Lakes States reported spending a total of $4,963,235,314 for restoration from FY92–04 in multi-year funding programs. In addition to this spending that is directed through multi-year funding programs, the Great Lakes States spend an estimated $24,945,260 annually on other programs in support of the Governors' nine priorities for restoration and protection. For more information, the complete report is available online at *http://cglg.org/projects/priorities/PolicySolutionsReport12–10–04.pdf*

Question 2. How can we better coordinate this massive restoration effort? How can we better coordinate Great Lakes programs at all levels of government so that we are more efficient and effective?

Response. To ensure better coordination, the Great Lakes Regional Collaboration and the Federal Interagency Task Force should be made permanent in law so that lines of communication can remain open through these important avenues. Although the Collaboration Executive Committee and the Federal Interagency Task Force have not reached complete agreement, they have proven to be valuable means of exploring issues.

The Great Lakes Governors favor the adoption of a collective problem solving model. Political leadership should set interim goals for addressing the items outlined in the Great Lakes Strategy. Technical experts from all levels of government should work together to create plans to meet each of those goals, and then work with Congress, State legislatures, Tribal and municipal governments, and the private sector to obtain funding to carry out the plans.

Question 3. What can the states do to raise the profile of this restoration effort beyond the region?

Response. The Executive Committee of the Great Lakes Regional Collaboration, on which the States are represented, is currently developing a communications strategy to publicize about the need for restoration of the Great Lakes ecosystem. There are several key audiences for this information:

- Elected representatives at all levels of government from the Great Lakes States. State legislatures in particular may be asked to support funding for Great Lakes priorities. In Ohio, approximately one-third of the State lies in the Lake Erie basin, so it will be important to convey the significance of Great Lakes restoration to legislators from downstate areas.
- Members of Congress from States outside the Great Lakes basin. It will not be possible to pass a Restoration bill without support from a broad array of Congressional representatives. It will be important to convey the national significance, indeed the global importance, of the Great Lakes.
- There are many professional organizations of environmental professionals. The directors of State environmental agencies communicate with one another through the Environmental Council of States (ECOS). The heads of drinking water programs, those involved in wastewater treatment, and managers of State Revolving Loan Funds have similar organizations. Comprising leaders in environmental protection and restoration, these groups can be an important conduit for building support for restoration of the Great Lakes.
- Many nongovernmental organizations are participating in the Collaboration. The Executive Committee has committed to ongoing public participation, including continuing to engage these groups, some of which are national in scope.
- The environmental NGOs in particular have organized through the Healing Our Waters Coalition. HOW is contracting with a public relations firm to help develop communications materials; the Executive Committee will coordinate its own plan with the HOW effort.

Question 4. What is the relationship between this restoration effort and the States' Great Lakes Protection Fund?

Response. The Governors of the Great Lakes States created the Protection Fund in 1989. Its mission is to support efforts that identify, demonstrate, and promote regional action to restore the health of the Great Lakes basin ecosystem. This private corporation was created to supplement the restoration activities of government entities, and every year supports approximately $3 million of new projects. Since it was incorporated, the Fund has provided over $46 million to support efforts that identify restoration opportunities and design regionally relevant restoration actions. Since the release of the Governors' nine priorities in October 2003, the Fund has focused its support on efforts that support their priorities. These investments develop and test the best ways to meet the Governors' shared priorities for Great Lakes restoration, which also formed the organizing principle of the Collaboration Strategy.

Aquatic Invasive Species:	$6.0 million
Habitat/Species:	$7.1 million
Coastal (Human) Health:	$5.0 million
AOC/Sediments:	$2.0 million
Nonpoint Source (and Water Resources):	$9.8 million
Toxic Pollutants:	$10.4 million

Among other things, Fund grantees have:

- Designed and tested ship-board methods to reduce the threat of exotic species,
- Evaluated technologies to stop the spread of invasive species through canals,
- Created and offered training to boat operators to contain spread invasive species,
- Designed and tested methods to restore wetlands, buffers, and hydrologic integrity of basin streams,
- Identified key habitat management and restoration locations,
- Provided technical assistance to the clean-up of Areas of Concern,
- Developed new, farmer-friendly, nutrient and pesticide management approaches,
- Tested watershed restoration strategies in urban settings, and
- Identified important sources of toxic materials entering the Great Lakes.

The Fund has also returned over $34 million directly to its member states for use in support of their individual Great Lakes priorities.

Going forward, the Protection Fund hopes to support teams that develop and test new ways to finance the State and local share of the priority work contemplated by the Strategy. At a minimum, some nine billion dollars will need to be raised by State and local governments. While the Fund cannot pay for those public works projects or other activity that remains a responsibility of government, it can and will help test new financing strategies. To date, the Fund has invested some $6.3 million in using markets to support environmental restoration. The Fund expects to make significant new investments in this area over the next year.

For further information on current projects, see *www.glpf.org*

RESPONSES BY BOB TAFT TO ADDITIONAL QUESTIONS FROM SENATOR OBAMA

Question 1. How would your respective organizations want the Task Force to incorporate governors and tribal leaders in future decision making? Do you believe that non-federal stakeholders need to be given a more formal role?

Response. The Federal Interagency Task Force was charged by President Bush with the task of better coordinating the 140 Federal programs that impact the Great Lakes. The non-federal partners in the Collaboration believe that the Task Force has made some strides in that direction, but that much more can and should be done. We would like to see the Task Force first review priority needs in the Basin, and then evaluate how Federal programs can be used in a coordinated fashion to address them. Too often, the Federal Government begins with an inventory of its programs, and then looks for projects those programs can take on. Given the nature of the Task Force's mandate, the non-federal partners believe the Federal agencies are best positioned to coordinate their own programs. That said, we strongly urge the Task Force to work more cooperatively both among its Federal members and with the other members of the Collaboration toward effective coordination of programs.

The Executive Committee of the Great Lakes Regional Collaboration includes representation of the Federal Interagency Task Force, the Great Lakes Governors, the Great Lakes Mayors, the Tribes, and the Congressional delegation. This group guided the preparation of the Collaboration Strategy, and has adopted a framework for its continued leadership of the Collaboration process.

Question 2. What are your organizations' plans to coordinate future restoration efforts across the region?

Response. The Executive Committee of the Great Lakes Regional Collaboration is currently working to identify specific collaborative projects through which the members can cooperatively move forward toward the goals in the Collaboration Strategy. The Executive Committee is specifically interested in projects that can be accomplished within existing resources over the next 2 years. While the non-federal members of the Collaboration concur that substantial additional investment will be needed to fully protect and restore the Great Lakes, we are also committed to making better use of existing resources, and to taking prompt action to begin implementing the Strategy's recommendations.

In addition, the Great Lakes Governors, through the Council of Great Lakes Governors, have formed the Governors' Priorities Task Force to coordinate restoration and protection efforts among the States. This Task Force developed the priorities that guided the Great Lakes Regional Collaboration and provides a forum for information sharing, communication and coordination among the States. This Task Force will continue to serve as a venue for State policymakers and technical experts to advance Great Lakes restoration and protection.

STATEMENT OF FRANK ETTAWAGESHIK, TRIBAL CHAIRMAN, LITTLE TRAVERSE BAY BANDS OF ODAWA INDIANS

Mr. Chairman and Members of the committee, my name is Frank Ettawageshik, Tribal Chairman of the Little Traverse Bay Bands of Odawa Indians.

I am here today with the humbling task of speaking on behalf of the ad hoc Tribal Caucus of the Great Lakes Regional Collaboration. I am honored by the faith and trust that the Tribal Caucus has placed in me to express perspectives and sentiments that speak to: (i) the important role that Tribal Nations play in the Collaboration and (ii) how the Collaboration Strategy might be implemented in way that not only will achieve its ultimate goal of protecting and restoring Great Lakes ecosystems, but that also is faithful to this Nation's treaty obligations and trust responsibilities toward Tribal communities.

The Tribal Caucus has coordinated Tribal participation under the Collaboration's Framework Agreement on the Executive Committee and on the various Strategy Teams. It will continue this role under the recently approved Strategy Implementation Agreement. In providing the Tribal Caucus's voice today in the context of its coordinating role, I do not presume to officially represent any particular Tribal government or Tribal governing body beyond that voice.

The Collaboration's Strategy to Restore and Protect the Great Lakes exemplifies the region coming together to support protection and restoration of the Great Lakes. The Collaboration partners and the Great Lakes stakeholder community can be proud of this unified effort. The Strategy is not an all encompassing solution to Great Lakes' problems. Nevertheless, its priorities and recommendations create an effective blueprint worthy of the political, economic and community commitment that will be necessary to realize its vision. It must be used as the guide to make correct fiscal and substantive policy decisions by all levels of government, by the private sector and by households throughout the Great Lakes Basin.

I. SUMMARY OF OVERRIDING TRIBAL CAUCUS PERSPECTIVES

At the outset, I wish to highlight some primary points from the Tribal Caucus's perspective. The remainder of my testimony then provides background information and additional detail to support these points:

- The Framework Agreement recognized Tribal issues and perspectives as an overarching issue for an important reason—for the over 35 Tribal Nations on the United States side of the Great Lakes Basin, ecological sustainability and Tribal sustainability go hand in hand. The same is true for our relative First Nations in Canada. Tribal communities are intricately tied to the natural environment to meet their subsistence, economic, cultural, spiritual and medicinal needs. This interdependent and reciprocal relationship between humans and the rest of nature will not endure if natural resources are too scarce, too contaminated or too degraded to meet Tribal needs and support Tribal culture.
- The Tribal Caucus is very pleased that the Strategy aligns so well with the values, traditions, and needs of Tribal communities. We all can be very proud that the Great Lakes region answered President Bush's call to set forth a consensus-based, action-oriented Strategy for preserving and restoring Great Lakes ecosystems. The Collaboration represents an unprecedented alignment ofpriorities and guiding principles among Tribal Nations, States, cities, industry and business, non-governmental organizations, and everyday citizens.
- The needs of the Great Lakes and the Collaboration's action plan to address them truly represent both a national and an international imperative. As the Strategy clearly demonstrates, the benefits flowing from Great Lakes ecological sustainability in harmony with economic vitality extend to the rest of our Nation and across our borders. Moreover, from the unique aspect of the United States' relationships with Tribal Nations, furthering the goals of the Strategy through funding of Tribal environmental and natural resource programs fulfills specific national obligations and policies embodied in:
    - Treaty obligations under various treaties between the Federal Government and Great Lakes Tribal Nations.
    - The Federal trust responsibility toward Tribal Nations.
    - Numerous Executive orders and statutes, such as the Indian Self-Determination and Educational Assistance Act, the Clean Water, and the Clean Air Act.
    - Various court decisions affirming the treaty and other reserved rights of Great Lakes Tribal Nations.
- The Strategy is a sound and effective blueprint for better focused and more efficient programs to address its priorities, yet we must be vigilant in implementation to not oversimplify the nature and extent of the ecological imperatives we face or the programs and actions that must be undertaken to address them. The Tribal Caucus recognizes the need to prioritize immediate actions and budgetary commitments as we begin to implement the Strategy. However, we are concerned that even further shortening of the list of priorities contained in the Strategy, simply for the sake of improved program efficiencies or cost savings, will short-change what needs to be done. We must keep in mind a number of key points as we proceed with implementation:
- The Great Lakes region is comprised of a number of complex and diverse ecosystems. There is a risk of over-portraying the Great Lakes as a single ecosystem. Creating a "short list" of priority actions carries the associated risk of abandoning or undercutting currently successful programs, such as the lakewide management planning efforts. It also creates a risk of proceeding on

a "least common denominator" basis or on a pared down list of actions developed for immediate political expediency.

- The Tribal Caucus is sensitive to this Nation's current fiscal and budgetary climate. Tribal Nations face many of the same dilemmas as others in this regard. Nevertheless, we must not sacrifice our ability to achieve the Strategy's goals under the guise of trying to achieve "more bang for the buck." Ours is a Nation of vast financial wealth and resources. Great Lakes protection and restoration clearly falls within primary governmental functions at all levels. The political will to make correct budgetary and substantive policy decisions must be nurtured. The correct decisions will lead to the appropriate application of our Nation's wealth and associated actions to the task at hand.
- The Federal Government must maintain a leadership role in setting the appropriate tone and taking the appropriate actions in response to this unprecedented Strategy. We are encouraged by the significant commitments and actions already undertaken by other Collaboration partners—Tribal, State and local governments, industry and business, non-governmental organizations and everyday citizens. We are witnessing an amazing momentum and confluence of energy among all Collaboration partners to make good decisions and significant financial commitments from tight budgets. We ask Congress and the Administration to do its part as well.
- The Federal Government plays an important role in ensuring the continuing capabilities of Tribal natural resource and environmental management programs. Those programs are particularly vulnerable to budget reductions. Any reduction in funding for a Tribal program, even a reduction that would be considered small by others, could result in the elimination of that program. In some cases, simply losing funding for a single Tribal staff member can eliminate or significantly reduce the ability of a Tribal Nation or Tribal agency to hold up their end of the bargain relating to the protection or restoration of Great Lakes ecosystems.
- The Strategy goes a long way to identify actions that can be undertaken to progress toward better-protected and more-restored Great Lakes ecosystems. Nevertheless, we can and should do more whenever possible. For example, the Tribal Caucus would like to see a more aggressive schedule for reducing mercury emissions from coal-fired utility plants. Moreover, there are other areas where the Tribal Caucus would like to see a more rapid and effective response to compelling problems, such as the control of invasive species through the implementation of more effective ballast water controls both under existing Clean Water Act authority and under new legislation.

The Tribal Caucus appreciates the committee's sensitivity toward and consideration of these perspectives. The other Collaboration partners have been particularly welcoming and supportive of Tribal concerns. The Collaboration has engendered mutual trust and respect among those interested in advancing Great Lakes protection and restoration. The Great Lakes Tribal Nations remain committed to that end, and will support and advance both the terms and the spirit of the Strategy wherever and whenever possible. They trust that Congress and the other partners involved will do the same.

II. TRIBES OF THE GREAT LAKES BASIN

The United States portion of the Great Lakes Basin is home to over 35 federally recognized Indian Tribal Nations who, although distinct and unique in their own right, have common history, culture and traditions, especially in their relationship to the natural environment and dependence on natural resources for subsistence, economic, cultural, spiritual and medicinal purposes.[1]

Great Lakes Tribal Nations have historical, spiritual and cultural roots in the Great Lakes Basin stretching from time immemorial. Tribal Nations continue to occupy and use their ancestral homelands with a notion of geographic place that embodies views of their origin, migrations and historical identity, the way Tribal cultural reality is perceived in the modern world, and the social and political means to partitioning and distributing resources. These connections between Tribal Nations and the Great Lakes are evident in the willingness to accept the responsibility of restoring and protecting the Great Lakes.

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[1] For additional background on the culture and history of Great Lakes Tribal Nations and their relationship to the natural environment, the following documents from the Great Lakes Regional Collaboration Appendix are attached and incorporated by reference: (1) Tribal Nations Issue and Perspectives; (2) Haudenosaunee Environmental Task Force Position on the Great Lakes.

Tribal Nations understand that the whole earth is an interconnected ecosystem. The health of any one part is related to the health of the whole. Tribal Nations have a spiritual and cultural responsibility to protect the waters of the Great Lakes as part of a greater overall effort to protect Mother Earth.

For Tribal Nations of the Great Lakes Basin, ecological sustainability and Tribal sustainability go hand in hand. Tribal Nations recognize the reciprocal relationship between humans and the rest of the natural world. Religious beliefs, including a spiritual interdependence and connection between all living and non-living things, guides Tribal members in the harvest and use of natural resources for subsistence, ceremonial, medicinal, ceremonial, spiritual or economic purposes.

The use of traditional foods is uniquely beneficial for members of Great Lakes Tribal Nations, including:

- the improvement of diet and nutrient intake;
- the prevention of chronic diseases associated with the consumption of non-traditional foods;
- the opportunities for physical fitness and outdoor activities associated with harvesting traditional foods;
- the opportunity to experience, learn, and promote cultural activities; and
- the opportunity to develop personal qualities desired in Tribal culture such as sharing, self-respect, pride, self-confidence, patience, humility and spirituality.

For Tribal Nations of the Great Lakes Basin and their members, the relationship to the natural environment, especially the Great Lakes, and dependence on natural resources for subsistence, economic, cultural, spiritual and medicinal purposes means little if there are insufficient resources, or if the available resources are contaminated or degraded to the point that they are unusable. It is important to remember the health benefits of traditional foods are quickly outweighed by the risks posed by the contaminants contained therein. For Tribal members "food security" means having traditional food sources that are both sufficient and free from contaminants.

III. ENVIRONMENTAL AND NATURAL RESOURCE PROGRAMS OF GREAT LAKES TRIBAL NATIONS AND TRIBAL AGENCIES

In light of the importance of the Great Lakes to Tribal Nations within the basin, many Tribal Nations and several intertribal agencies engage in a diversity of significant environmental and natural resource management programs that are consistent with the Great Lakes Regional Collaboration Strategy. The nature of the programs of each particular Nation or agency is contingent on the funding available and the needs or priorities of the community involved. With regard to the relationship between funding and these programs:

- Important Federal funding sources for Tribal programs include:
  - Bureau of Indian Affairs funds provided pursuant to the Indian Self-Determination and Educational Assistance Act;
  - United States Fish and Wildlife Service funds provided under a variety of project-specific authorizations; and
  - Environmental Protection Agency funds provided under the Clean Water Act, the Clean Air Act, the Tribal General Assistance Program, and other authorizations.
- Discretionary revenue generated from Tribal economic enterprises serves to supplement Federal and other funding for these programs for some Tribal Nations.
- Because of the myriad of funding paths for Tribal environmental and natural resource programs, individual Tribes must ensure their ability to pursue their own funding path and work with whatever resources are available to them.
- Since Tribal environmental and natural resource management programs are particularly vulnerable to budget reductions, any reduction in funding for a Tribal program, even a reduction that would be considered small by others, could result in the elimination of that program. In some cases, simply losing funding for a single Tribal staff member can eliminate or significantly reduce the ability of a Tribal Nation or Tribal agency to hold up their end of the bargain relating to the protection or restoration of the Great Lakes ecosystem.

The Strategy recognizes that maintaining base level funding for Tribal programs is necessary so that Tribal Nations are able to both provide for the health and welfare of their communities and so that Tribal Nations can remain effective partners in Great Lakes protection and restoration efforts. Despite their fiscal and staffing limitations, Tribal Nations and their agencies are particularly efficient delivery systems for environmental and natural resource programs. More importantly, they

often provide the only delivery mechanism of such programs for Tribal members. Tribal Nations need to provide services, such as fish contaminant testing and consumption advisories focused on the specific waters fished by Tribal members, because no other government or agency does so in such a focused manner. Tribal members need to know which fish are safer to eat from the waters that they fish. Generalized fish consumption advisories do not accomplish this.

In addition to the value of Tribal environmental and natural resource programs to Tribal members, there are significant overall public benefits that result from Tribal programs. If Tribal Nations fulfill their responsibilities toward Tribal members, benefits will flow to Federal, State and local governments, their constituents and surrounding communities. These benefits include enhanced water quality, increased numbers of fish with reduced levels of contaminants, improved aquatic, wetland and upland habitat, and protection from invasive species, as well as numerous others.

Depending on the availability of funding and the extent of the particular governmental infrastructure, efforts Great Lakes Tribal Nations undertake in their role as partners in the protection and restoration of the Great Lakes ecosystem include:

- Operation of fish hatcheries and involvement in a variety of fish stocking programs in the Great Lakes.
- Harvest management, monitoring and regulation for a variety of fish, plant and animal species within the basin.
- Development of natural resource management plans and conservation codes.
- Population studies and assessments for a variety of fish, plant and animal species within the basin, including lake trout studies.
- Monitoring and restoring water quality of Great Lakes tributary streams and rivers through development of watershed management plans, repair of road and stream crossings, stream bank stabilization, habitat inventories, invertebrate surveys and fish assessments.
- Participation in joint efforts to protect Great Lakes tributary waters by placing watershed land in conservation easement status.
- Adoption of burn barrel ordinances and initiation of burn barrel outreach and elimination programs.
- Habitat enhancement within the basin for various plants, fish and animal species including wetland protection and restoration as part of the Circle of Flight initiative in conjunction with the United States Fish and Wildlife Service.
- Exotic species control including work in conjunction with the United States Fish and Wildlife Service to control and reduce sea lamprey populations.
- Voluntary efforts to reduce the presence of mercury by providing thermometer exchanges, cleaning up household hazardous waste and progressing toward making Tribal facilities mercury free.
- Research projects and fish consumption advisories, based largely on sampling of fish or other traditional foods, to help prevent contamination of natural resources and to help Tribal members maximize the health benefits from a traditional diet.
- Incorporation of alternative energy technologies and incorporation of energy conservation measures in new construction.
- Establishment of household and agricultural waste disposal depots.
- Conducting public information and education activities.

Many of the programs just mentioned are the result of Tribal Nations or Tribal agencies partnering with Federal, State and local governments, colleges and universities, non-governmental organizations, conservation groups and private landowners in cooperative efforts to protect and restore the Great Lakes Ecosystem. Such partnerships are necessary for several reasons:

- Because treaty rights often extend to areas of shared jurisdiction and use, other governments are compelled, whether legally or practically, to acknowledge the rights and associated self-regulatory systems and to integrate Tribal Nations as natural resource management partners.
- When dealing with fish and wildlife, the tendency of the resource to migrate across governmental boundaries necessitates co-management of the resource to ensure collection of accurate information on State and Tribal harvests and on the status of natural resource populations.
- Pollution in air and water is transient. Contaminants discharged upstream or upwind directly affect those downstream and downwind. Cross jurisdictional partnerships help to track pollutants as they move and to monitor levels of contaminants in resources such as fish and plants.

Importantly, inter-governmental and other partnerships allow the parties to achieve public benefits that no one partner could achieve alone. Some examples of the public benefits of these partnerships include:

• Identifying mutual natural resource concerns, and implementing joint conservation and enhancement projects (e.g. wild rice restoration, waterfowl habitat restoration and improvement projects, and exotic species control projects).
• Providing accurate information on State and Tribal harvests and on the status of natural resource populations e.g. joint fishery assessment activities and jointly prepared reports).
• Maximizing financial resources to avoid duplication of effort and costs e.g. coordinating annual fishery assessment schedules and sharing personnel/equipment).
• Contributing scientific research and data regarding natural resources and public health (e.g. forbearer/predator research, fish consumption/human health studies, and other fish contaminant research particularly regarding mercury).
• Engendering cooperation rather than competition (e.g. cooperative law enforcement and emergency response, joint training sessions, mutual aid emergency services arrangements, and cross-credential agreements).

IV. IMPLEMENTATION OF THE GREAT LAKES REGIONAL COLLABORATION STRATEGY

The Great Lakes Regional Collaboration Executive Committee recently approved the Strategy Implementation Framework to guide implementation of the Strategy and to define the continuing role of the Collaboration. The Framework sets forth a process to ensure ongoing coordination of activities promoting the goals and priorities of the Strategy. A continuing commitment to implementation of the Strategy through the efforts of the Collaboration partners is important to advance the Strategy's goals of protecting and restoring the Great Lakes.

When viewed through the lens focused on protection and restoration, the needs of the Great Lakes are many and diverse. The Great Lakes Regional Collaboration Strategy aims to identify and prioritize those needs. It is crucial to remember, however, that the Strategy is neither a cure all nor an end all.

To fully address the goal of protecting and restoring the Great Lakes and to ensure that important needs of the region are not left behind, the priorities set forth in the Strategy should serve as a substantive and fiscal policy decisionmaking guide for the region, but not an exclusive set of actions. As the Strategy is implemented by the partners and the greater stakeholder community, it will be important to follow the Strategy priorities while allowing room for parties to engage in programs utilizing resources and funding outside of the parameters of the Strategy. A program beneficial to the Great Lakes should not be turned away or cast aside simply because it does not fit into the neat box created by the Strategy.

There has been significant pressure on the Collaboration partners to develop a list of "near term" actions to begin implementation of the Strategy. Consensus on "near term" actions has been difficult to reach. Regardless of any consensus on "near term" actions to implement the Strategy, protection and restoration of the Great Lakes cannot be oversimplified by the creation of a list.

As the Strategy is implemented the partners must keep an eye on the "Big Picture." That is, the focus must be on addressing the challenges of the Great Lakes ecosystem by making the Collaboration greater than the sum of the particular actions carried out in its name. This requires the ability to look past any "action" lists that are developed and even past the specified Strategy team priorities to remember that, as set forth in the Strategy, the end is to protect and restore the Great Lakes and the means must be by whatever vehicles are available. Implementation must include continued support for currently successful programs in the region in addition to the creation of new programs. For Tribal Nations and their treaty ceded territory agencies such as the Great Lakes Indian Fish and Wildlife Commission (GLIFWC), the Chippewa Ottawa Resource Authority (CORA) and the 1854 Authority, at the very minimum this means continued support for existing programs.

V. FUNDING FOR ENVIRONMENTAL AND NATURAL RESOURCE PROGRAMS

As noted, the focus of implementing the Strategy needs to be on the "Big Picture" goals of protection and restoration of the Great Lakes ecosystem. Similarly, the focus within the context of funding Great Lakes environmental and natural resource programs must look beyond the four corners of the Strategy document to ensure continued support for programs that may not have been specifically captured by the Strategy or its appendices, but that still relate directly to it or will further its priorities and principles. For both Tribes and the Great Lakes region, this means keeping all doors open when it comes to the goals of protection and restoration of the Great Lakes. By doing so, our opportunities to engage in beneficial programs are not constrained by a set of priorities or funding sources that are artificially limited by the current political or budgetary climate.

While Tribal Nations recognize the need, from both the standpoint of efficiency and fiscal responsibility, to prioritize and coordinate programs within the region, this cannot serve as a justification or excuse for giving the region as a whole, and Tribal Nations in specific, less from a funding perspective. As these streamlining efforts go forward, the Federal Government's unique trust and treaty obligations to Tribal Nations must remain an overarching consideration and cannot be compromised in the process.

The Strategy should not be used as a means to force us into a situation where we have to bargain against ourselves as a region or within the Tribal stovepipe itself to get funded as we should or even simply to maintain our base funding. Despite the uncertainties of the budgetary process, the Strategy must serve as a guide for all levels of government, the private sector and households throughout the Great Lakes Basin for making to correct fiscal and substantive policy decisions at every opportunity.

VI. CONCLUSION

The Great Lakes Regional Collaboration Strategy sets forth important priorities for protection and restoration of the Great Lakes. The collaborative effort to achieve these goals must go forward, guided by, but not limited by, the priorities and principles enumerated in the Strategy. A key to successful implementation of the Strategy, both for Tribal Nations and for the region, is to support and promote the spirit of the Strategy by whatever means possible.

Tribal Nations and Tribal agencies are valuable partners in this process, providing a multitude of environmental and natural resource programs that efficiently deliver services to Tribal communities that in turn benefit surrounding communities. The need for continuing Tribal programs is given patent recognition by the Strategy, as is the coexisting need for base funding for these programs. As guided by the blueprint of the Strategy, Tribal Nations will and must maintain their ability to engage in beneficial programs notwithstanding artificial limitations imposed by priorities, funding sources or potential misguided substantive policies controlled by others.

The Strategy provides us all with an agreed upon path to follow to achieve the "Big Picture" goal of protection and restoration of the Great Lakes. Now it is up to everyone, both in and outside the region, to build on the priorities and principles set forth in the Strategy; to let the Strategy be their guide for making the right choice at every fork in the road.

GREAT LAKES REGIONAL COLLABORATION

Tribal Nations Issues and Perspectives

Version 1.0

April 26, 2005

The purpose of this document is to provide the GLRC Executive Committee and Strategy Teams with information on the nature of Tribal sovereignty, rights, and interests as they relate to Great Lakes environmental protection and natural resource conservation issues.

The Framework document signed by the members of the GLRC noted that each Strategy Team should explicitly consider Tribal rights, interests, structure, and programs involved in its issue area and should identify priorities and strategies that relate to the health, welfare, and culture of Tribal communities.

The Tribal Nations that signed the Framework have agreed to organize an *ad hoc* Tribal Caucus for the purposes of facilitating intertribal cooperation and coordinated participation in the GLRC processes. The Caucus prepared this document to help other GLRC participants better understand tribal governments and tribal communities so that the Great Lakes Protection and Restoration Strategy properly addresses and protects tribal needs.

It is important to note that this report is not exhaustive in its scope or coverage, "legally" definitive, or representative of the "official" views any one Tribal Nation or tribal government.

As this document is relatively general in nature, the Tribal Caucus welcomes inquiries from the Executive Committee and Strategy Teams regarding further details, supporting documentation, clarification, or additional resources and information.

The Tribal Caucus anticipates an on-going dialogue on tribal issues and perspectives at all levels of the GLRC process. It hopes questions will be routinely addressed within the Strategy Teams themselves by individuals associated with Tribal Nations who are members of each Team, as well as by those who regularly are involved at the Executive Committee level. However, the Caucus will gladly convene to respond to specific inquiries and provide additional feedback as the need may arise.

I. Tribal Nations of the Great Lakes Basin

A. Basic Information

There are 35 federally-recognized Indian Tribal Nations whose reservations are located in the Great Lakes Basin and/or who may retain treaty guaranteed rights to hunt, fish or gather within the Great Lakes Basin in areas ceded to the United States in various treaties. *See* Attachment A: Great Lakes Tribes Listed by State, Map of Indian Lands in Great Lakes Basin (EPA Documents), and Map of 1836, 1837, 1842 and 1854 Treaty Ceded Territories (GLIFWC document).

Each Tribal Nation is legally, politically, socially and culturally unique:

- Tribal governments are established in accordance with each Tribal Nation's own laws and traditions, as well as within the framework of how Tribal Nations have been brought into the U.S. Constitution.
- The powers of tribal governments generally are set forth in tribal Constitutions or similar organic documents, but also might be determined in accordance with a Tribal Nation's customs and traditions.
- As a general matter, absent the consent of others, no one Tribal Nation may speak for another Tribal Nation. Moreover, there is no entity that represents or speaks for all Tribal Nations in the Great Lakes Basin.

Although unique and distinct in their own right, Great Lakes Tribal Nations share much in terms of the historic, cultural and social underpinnings of their respective communities, particularly regarding their interdependence with and reliance upon natural resources to meet subsistence, economic, cultural, spiritual, and medicinal needs. *See* Attachment B: Tribal Society and Culture – Ecological Sustainability/Cultural Sustainability

Some Tribal Nations in the Great Lakes Basin have formed intertribal agencies to assist them regarding treaty-reserved hunting, fishing and gathering rights. Such agencies carry out their responsibilities in accordance with specific delegations of authority from their member Tribal Nations:

- The Chippewa Ottawa Resource Authority (CORA) assists five Tribal Nations that signed the Treaty of 1836 in protecting and implementing such rights in parts of Michigan. *See* Treaty of Washington (1836), 7 Stat. 491.
- The Great Lakes Indian Fish and Wildlife Commission (GLIFWC) assists eleven Tribal Nations that signed various Treaties, including those of 1836, 1837, 1842 and 1854, in protecting and implementing such rights in parts of Michigan, Minnesota and Wisconsin. *See* Treaty of Washington (1836), 7 Stat. 491; Treaty of St. Peters (1837), 7 Stat. 536; Treaty of La Pointe (1842), 7 Stat. 591; and Treaty of La Pointe (1854), 10 Stat. 1109.
- The 1854 Authority assists two Tribal Nations that signed the Treaty of La Pointe (1854) in the northeastern part of Minnesota.

The Six Tribal Nations within the Haudenosaunee Confederacy are particularly unique in terms of their retained sovereignty vis-à-vis the federal and state governments. To the extent that the status of these Nations may vary from some of the concepts stated in this paper, the GLRC Tribal Caucus defers to the Nations of the Haudenosaunee Confederacy to provide information relevant to their particular issues and perspectives in a separate document as they may deem appropriate.

A.1 Tribal Governance

The powers of tribal government generally are vested in what is commonly referred to as a tribal council:

- In most instances, tribal members elect council members.
- For some Tribal Nations, ultimate legislative power has been reserved to the general tribal membership and is exercised through what is commonly referred to as a general council.
- The tribal council (or sometimes called a tribal executive committee) serves as the Tribal Nation's primary administrative mechanism in carrying out the general council's actions and other powers set forth in the relevant organic documents.

The powers and roles of tribal officials, such as Chairs or Chiefs, are determined by each Tribal Nation's laws and customs. Some tribal council Chairs are directly elected by tribal voters; others are chosen from among the sitting council members by the tribal council itself; still others may be chosen in accordance with custom and tradition based upon clan or other considerations.

Tribal governments provide a range of governmental services to promote the health, welfare and security of their communities. These programs include education, health care, housing, public safety/law enforcement, judicial systems, social services, natural resources management, and environmental protection.

The needs of tribal communities greatly exceed both the financial and human resources available to the institutions of tribal government. Tribal communities face decades of catching up vis-à-vis other communities in terms of funding and infrastructure to provide basic governmental programs, particularly regarding the threats posed by environmental degradation to their natural resources-dependent cultures.

A.2 Demographic Data

The total enrolled membership of the 35 Tribal Nations within the Great Lakes Basin is about 175,000, while the total service population (i.e. enrolled members and others who live on or near tribal reservations and who are entitled to receive tribal services and/or benefits) is about 110,000.

Many tribal reservations in the Great Lakes Basin are a mixed pattern (often called "checkerboard") of land ownership involving lands owned by the United States and held in trust for the Tribal Nation or individual tribal members, by the Tribal Nation itself in "fee" title, and by non-tribal entities and individuals in "fee" title. In some instances, there also may be public land administered by a federal or state agency.

Many non-tribal members reside within tribal reservations. In addition, portions of many municipalities are located within tribal reservations. This leads to many issues regarding the extent of tribal jurisdiction over non-Indians and activities by non-tribal entities, as well as regarding more practical aspects of delivering services to provide for the overall health, welfare and safety of those residing within reservation boundaries.

Tribal communities tend to be poorer and have higher unemployment levels than most other communities:

- Recent census data show that the poverty rate in reservation areas is approximately 50%, almost four times the United States average, and that the poverty rate for Indian children in reservation areas is 60%.

- Other federal data show that, as of 1999, over 40% of all adults living on or near reservations were unemployed and that over 30% of those employed were still living in poverty.

Tribal populations tend to face increased risk of public health threats from environmental contamination and to be subject to impacts from environmental degradation to a greater extent than other population segments:

- Tribal communities tend to consume larger quantities of fish, game and other natural foods than other communities, and thus face higher health risks posed by bioaccumulative toxics.

- In 2001, approximately 34% of drinking water suppliers in Indian country violated monitoring and reporting requirements and approximately 5% violated maximum contaminant level/treatment technologies. The vast majority of the public water systems with significant noncompliance have been out of compliance for nine months or more.

- Many Tribal Nations have no waste management program at all and use dumps or burn barrels as the primary method of waste disposal.

According to a 1999 Indian Health Service report, tribal communities face significant disparities vis-à-vis other communities regarding disease and mortality rates:

- Tribal communities have higher incidences than other communities of certain diseases, such as diabetes, cardiovascular diseases and hypertension, obesity, gall-bladder disease, and dental disease.

- Age-adjusted death rates for the following causes were considerably higher than those for other population segments in 1995: alcoholism—627 percent greater; tuberculosis—533 percent greater; diabetes mellitus—249 percent greater; accidents—204 percent greater; suicide—72 percent greater, pneumonia and influenza—71 percent greater; and homicide—63 percent greater.

Studies have shown a clear relationship between the use of traditional foods food and the health and well-being of tribal members, including:

- The improvement of diet and nutrient intake.

- The prevention of chronic diseases.

- The opportunities for physical fitness and outdoor activities associated with harvesting traditional foods.

- The opportunity to experience, learn, and promote cultural activities.

- The opportunity to develop personal qualities valued in tribal culture such as sharing, self-respect, pride, self-confidence, patience, humility and spirituality.

B. Tribal Reserved Rights and Sovereignty – Tribal Nations as Full Governmental Partners in Great Lakes Protection and Restoration

In general, Tribal Nations retain those rights and powers that they have not voluntarily relinquished or that Congress has not abridged. The U.S. Supreme Court has referred to Tribal Nations as "domestic dependent sovereigns" that retain the right to make and be governed by their own laws. *See* Attachment C: Tribal Nations within the United States Constitutional System – General Principles.

As a general rule, the right to tribal self-government remains intact unless tribal powers have been modified by treaty or by Congressional action.

In the on-reservation context, inherent tribal environmental and natural resource management authority extends to:

- Tribal members and tribal lands.
- Non-tribal members or non-tribal lands where there is consent to tribal authority or where non-member conduct threatens or has some direct effect on the political integrity, the economic security, or the health or welfare of the Tribal Nation.
- Tribal members and non-tribal members where Congress has specifically provided, such as in the Clean Water Act and the Clean Air Act where Tribal Nations may seek primacy for many federal environmental programs. A number of Tribal Nations in the Great Lakes basin have obtained or are in the process of seeking such federal approval.

Tribal "on-reservation" rights and authority may extend outside of reservation boundaries. For example, many reservations are located on the shores of a Great Lake precisely to secure access to the Lake for fishing and other purposes. In this context, the rights reserved by the Tribal Nation, and in most instances guaranteed by treaty, are considered "reservation-based" even though they extend to areas outside of a reservation, and the Tribal Nation involved will claim jurisdiction over these areas.

In addition to reservation-based rights and interests, many Great Lakes Tribal Nations retain treaty-guaranteed off-reservation hunting, fishing and gathering rights that extend to large parts of the Great Lakes basin:

- These are commonly referred to as ceded territory treaty rights because they pertain to areas that Tribal Nations ceded (or sold) to the United States in various treaties.
- These rights may include the authority and responsibility to ensure the natural resources subject to the rights, as well as the habitats and ecosystems supporting those resources, are conserved and protected.

- Such off-reservation treaty rights have been judicially affirmed in portions of Lakes Superior, Michigan and Huron and in "inland" parts of Wisconsin and Minnesota adjacent the Lakes. A case is pending involving claimed "inland" treaty rights in portions Michigan's Upper and Lower Peninsula.

Great Lakes Tribal Nations operate a wide variety of natural resource and environmental management programs:

- The number and extent of a particular Nation's program depends upon funding availability and the particular needs/priorities of the community involved.
- Some Tribal Nations are able to supplement federal and other funding for these programs with discretionary revenue generated from tribal economic enterprises.
- Important federal funding sources for tribal programs include Bureau of Indian Affairs funds provided pursuant to the Indian Self-Determination and Educational Assistance Act, United States Fish and Wildlife Service funds provided under a variety of project-specific authorizations, and Environmental Protection Agency funds provided under the Clean Water Act, the Clean Air Act, the Tribal General Assistance Program, and other authorizations.

Depending on the availability of funding and the extent of particular governmental infrastructure, Great Lakes Tribal Nations undertake:

- Tribal natural resource programs that generally relate to land/habitat management and harvest regulation. Many Tribal Nations have developed Integrated Resource Management Plans or similar documents that serve as comprehensive planning documents to guide tribal decisions relating to land use and management.
- Tribal environmental management programs relating to water quality monitoring and regulation, air quality monitoring and regulations, solid waste disposal, underground storage tanks, habitat restoration, and particular circumstances involving contaminated sites or pollution discharges.

B.1 Government-to-Government Relationships

The government-to-government relationship implicit in federal treaty making and in the federal trust responsibility toward Tribal Nations and individual tribal members has been expanded over time to include the full gamut of federal policy implementation by all federal agencies.

This relationship requires federal agencies to interact directly with Tribal Nations on a governmental basis, not merely as a segment of the general public:

- This obligation is separate and distinct from obligations to states and other governments as well as from requirements affording the opportunity for general public input on federal decisions.
- Federal agencies are to consult with tribal governments and their designated governmental representatives, to the greatest extent practical and as not otherwise

prohibited by law, before taking actions that affect tribal lands, resources, people, or treaty rights.

Many states, such as Michigan and Wisconsin, have adopted government-to-government consultation policies similar to that required of the federal government.

B.2 State Authority and Obligations Regarding Tribal Nations

State authority to regulate Tribal Nations and tribal members is limited because of the constitutional allocation of power between the federal and state governments, particularly in the context of the Constitution's Indian Commerce Clause and the Supremacy Clause.

Generally, a state may not infringe upon the right of Tribal Nations to make and be governed by their own laws concerning internal tribal affairs. However, Congress may specifically grant state authority over tribal affairs. Congress also may preempt state authority over tribal affairs through the operation of a federal regulatory scheme.

For reservation-based matters, unless Congress has otherwise provided, states generally do not have the authority to regulate tribal governments, tribal members, tribal lands, or matters where there is a tradition of tribal self-government. For example, states generally may not regulate tribal members exercising reservation-based hunting or fishing rights.

Because of the "checkerboard" nature of land ownership within tribal reservations and the presence of non-Indians living, working and otherwise undertaking activities within reservations, the extent of state authority over reservation-based matters is a continual subject of discourse, debate and sometimes litigation:

- Tribal Nations take the view that tribal governments are or should be the primary authority over reservation-based matters.
- States tend to be particularly concerned with exercising state authority over non-tribal members and non-tribal lands within reservations.
- The result is a truly dynamic relationship between Tribal Nations and states that engenders a wide range of cooperation and coordination, as well as stalemates and disagreements.
- In the area of environmental regulation, issues frequently arise over the extent of state jurisdiction over activities that take place within reservation boundaries. Often these issues involve whether a particular federal law (such as the Clean Water Act) provides for tribal or federal authority to the exclusion of state authority.

Tribal Nations holding off-reservation rights have a unique relationship with the states in which the rights may be exercised:

- Tribal Nations are particularly concerned about how state actions – such as harvest levels authorized for state licensees, the issuance of water pollution discharge permits, or the establishment of state air emission standards – could impact the quantity or quality of the natural resources that tribal members harvest pursuant to those rights.

- A state may not infringe upon a those rights either directly through the regulation of the time, manner or place of treaty-protected harvest activities, or indirectly through the exercise of state management authority that is retained in the ceded territories.

- Whether viewed as co-management or cooperative management responsibilities, Tribal Nations and states are compelled to communicate and engage with each other in the exercise of their respective responsibilities in the off-reservation ceded territories.

II. Implications for the GLRC – Issues of Special Concern to Tribal Nations

The Tribal Caucus recognizes that each Strategy Team will need to consider tribal interests and perspectives in the context of the particular issues within a Team's charge. However, the Caucus offers a few thoughts to assist the Teams and the Executive Committee as they consider implications relating to Tribal Nations, their rights, and their communities:

- Budgetary/Financial Considerations – Tribal environment and natural resource management programs are particularly vulnerable to any budget reductions or reallocation of federal funds to non-tribal programs. The loss of what might be considered a small amount of funding to others could be a large percentage of a particular tribal program and simply amount to *de facto* elimination of that program. This would undermine treaty and other obligations that guarantee Tribal Nation self-determination and self-governance, as well as the obligations that many Tribal Nations must fulfill under particular court decisions or statutory schemes. It also would deprive the broader public from the benefits derived from the tribal programs that extend beyond tribal communities.

- Federal Obligations – Tribal participation in the GLRC process neither relieves the federal government from its particular treaty obligations toward those Tribal Nations nor the state governments from their obligation not to infringe on those rights. The fact that Tribal Nations may be willing to collaborate with other governments and stakeholders in the GLRC in an effort to align natural resource/environmental protection goals and policy priorities does not diminish treaty obligations or the federal trust responsibility.

- Mutual Benefits – There are significant overall public benefits in ensuring that tribal programs and natural resource/environmental management infrastructure are supported and enhanced. Great Lakes protection and restoration present "same side of the fence" issues for tribal, federal, state and local governments, as well as for NGO's. If Tribal Nations fulfill their responsibilities toward their people, all within the Great Lakes Basin will benefit from the exercise of environmental stewardship based upon a long-term perspective. And, cooperation between Tribal Nations and others builds relationships and alleviates problems/disputes associated with the federal/state/tribal jurisdictional maze.

- Human Health/PBT Reduction – Direct exposure to contaminated resources is much greater for tribal communities than for others. Risk assessments based on standard assumptions about consumption rates of non-Indian population segments may not adequately assess risks to tribal communities. Similarly, emission/pollution standards that are based upon risk assessments relevant to non-Indian populations could expose tribal communities to greater health risks.

- Research and Monitoring – Research and monitoring must take into account the consumption patterns and risk exposures of tribal members who engage in subsistence life ways, who use natural resources for medicine and in ceremonies, and whose livelihood is based upon natural resources. Also, tribal indigenous or traditional ecological knowledge offers a wealth of information that can enhance research and monitoring efforts.

- Invasive Species – Invasive species particularly threaten tribal life ways because of significant adverse impacts on tribal fisheries and fishing activities. For example, sea lamprey mortality on Lake Trout populations often nears harvest mortality in Lake Superior, and in fact exceeded it as recently as 1999. And, in the treaty ceded waters of northern Lake Michigan, sea lamprey damage has become so great that there is virtually no harvestable surplus available either for tribal commercial or for sport recreational fisheries. In addition, zebra mussel infestations in the areas where a number of northern Michigan Tribal Nations fish are so pervasive that tribal nets are rendered unusable by the mussels themselves that attach to nets or by the algae blooms that result from the mussels' presence.

- Tribal Lands – While tribal lands face pollution/degradation problems, many are among the most pristine and non-degraded lands in the Great Lakes Basin. The Tribal Nations seek to protect them as such, knowing that it is better to preserve than to allow degradation that in turn requires restoration.

- Tribal Historic and Cultural Properties – Many particular locations around the Great Lakes are of cultural and historic significance to one or more of the Tribal Nations. For example, a site may be important because it contains human remains, funerary objects or items relating to tribal use and occupancy, because it is used during certain ceremonies, or because it contains particular natural resources, such as a wild rice bed. These locations must not be desecrated by habitat destruction, pollution, or land disturbing activities. In addition, remediation or restoration activities must be undertaken with the utmost of care so as to detect any such properties within the site and to properly repatriate any remains or objects to the proper Tribal Nation.

- Nature and Extent of "Negative" Impacts on Tribal Communities – What might be viewed as a small, minor or short-term environmental consequence by another community could easily be viewed as a major, significant or long-term consequence by a tribal community. For example:

- Many tribal members use natural resources for medicines and in religious ceremonies. Their faith in the healing and spiritual power of those resources depends upon the purity of the resources used. It is not only the physical health of the individual that may be at risk if the resource is contaminated, but also the person's faith in their medicines and religion.

- For Tribal Nations and their communities, the right to hunt, fish and gather means little if there are insufficient resources, or if the resources are degraded or contaminated to the extent that tribal members are not able to use them, to meet subsistence, cultural, medicinal and spiritual needs.

ATTACHMENT A

Great Lakes Tribes Listed by State

Michigan

Bay Mills Indian Community of Michigan
Grand Traverse Band of Ottawa and Chippewa Indians of Michigan
Hannahville Indian Community of Michigan
Huron Potawatomi Nation (Nottawaseppi)
Lac Vieux Desert Band of Lake Superior Chippewa Indians
Keweenaw Bay Indian Community
Little River Band of Ottawa Indians
Little Traverse Bay Bands of Odawa Indians
Match-e-be-Nash-She-Wish Band
Pokagon Band of Potawatomi Indians
Saginaw Chippewa Indian Tribe of Michigan
Sault Ste. Marie Tribe of Chippewa

Minnesota

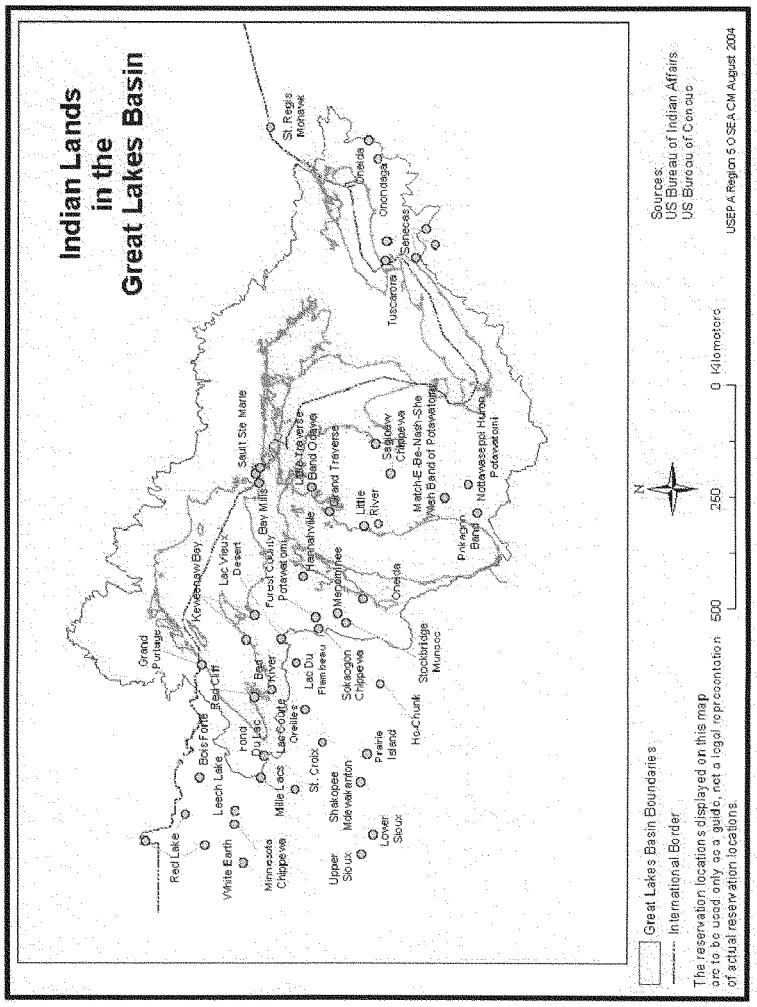
Bois Forte Band of Chippewa
Fond du Lac Band of Lake Superior Chippewa Indians
Grand Portage Band of Chippewa Indians
Leech Lake Band of Chippewa
Mille Lacs Band of Ojibwe
Minnesota Chippewa Tribe
White Earth Band of Chippewa

Wisconsin

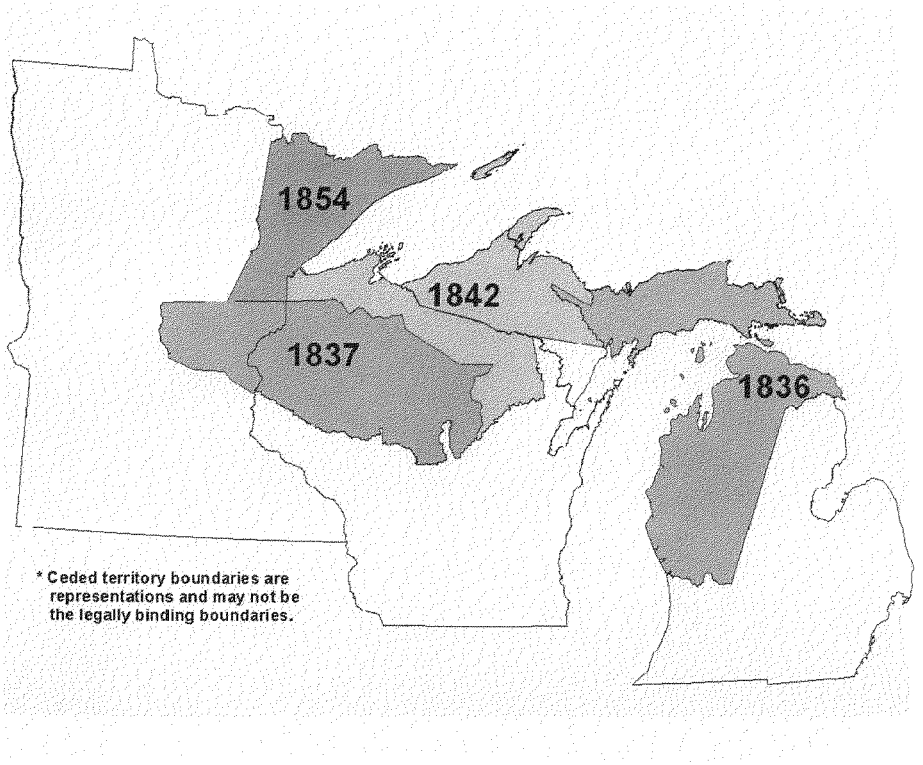
Bad River Band of Lake Superior Tribe of Chippewa Indians
Forest County Potawatomi
Lac Courte Oreilles Band of Lake Superior Chippewa Indians
Lac du Flambeau Band of Lake Superior Chippewa Indians
Menominee Indian Tribe of Wisconsin
Oneida Nation of Wisconsin
Red Cliff Band of Lake Superior Chippewa Indians
Sokaogon Chippewa Community (Mole Lake Band)
St. Croix Chippewa Indians of Wisconsin
Stockbridge-Munsee Community of Wisconsin

New York

Oneida Indian Nation of New York
Onondaga Nation
Seneca Nation of Indians
St. Regis Mohawk Nation (Akwesasne Mohawk Nation)
Tuscarora Nation
Tonawanda Seneca Nation


Indian Lands
in the
Great Lakes Basin
Great Lakes Basin Boundaries
International Border
The reservation locations displayed on this map are to be used only as a guide, not a legal representation of actual reservation locations.
N
0 Kilometers
500
250
Sources:
US Bureau of Indian Affairs
US Bureau of Census
USEPA Region 5 OSEA CM August 2004
Red Lake
Bois Forte
Leech Lake
White Earth
Fond du Lac
Grand Portage
Bad River
Lac Courte Oreilles
Lac Du Flambeau
St. Croix
Mille Lacs
Minnesota Chippewa
Upper Sioux
Shakopee Mdewakanton
Lower Sioux
Prairie Island
Sokaogon Chippewa
Ho-Chunk
Stockbridge Munsee
Menominee
Keweenaw Bay
Lac Vieux Desert
Forest County Potawatomi
Oneida
Sault Ste Marie
Bay Mills
Pokagon Band
Nottawaseppi Huron Potawatomi
Little River
Saginaw Chippewa
Match-E-Be-Nash-She Wish Band of Potawatomi
Grand Traverse Band Ottawa
Hannahville
St. Regis Mohawk
Oneida
Onondaga
Tuscarora
Cayuga
Senecas

Examples of Treaty Ceded Territories in the Great Lakes Basin



ATTACHMENT B

Tribal Society and Culture – Ecological Sustainability/Cultural Sustainability

For the Tribal Nations of the Great Lakes Basin, ecological sustainability ensures tribal sustainability, and vice versa.

Although unique and distinct in their own right, the Tribal Nations share much in terms of the historic, cultural and social underpinnings of their respective communities, including:

- A continuing dependence on the complete inventory of species – The use of virtually all plants and animals for subsistence, ceremonial, medicinal, spiritual or economic purposes.

- Close ties to the natural environment through a system of beliefs and practices that organize everyday life – Great Lakes Tribal Nations continue to occupy and use their ancestral homelands with a notion of geographic place that embodies views of their origin, migrations and historical identity, the way tribal cultural reality is perceived in the modern world, and the social and political means to partitioning and distributing resources.

- Indigenous/Traditional ecological knowledge – A wealth of information passed between generations about plants and animals, about their habitats, habits, and natural processes, and about the impacts of human activities on them.

- The organization of families and communities around differing activities according to the changing seasons as resources become available for harvest – The "circle of the seasons" and the parallel harvest patterns that provide the fruits of the harvest as well as opportunities for cultural expression and transmission of cultural patterns from one generation to the next.

- Religious beliefs that guide the harvest and use of natural resources – A spiritual interdependence and connection between all living and non-living things regarding the origin and creation of the natural world as well as the relationships between all things found there.

- The relationship of humans to the rest of nature as one of reciprocity, and the proper attitude toward the natural world as one of humility and gratitude – The manner and rituals of harvest and use become key components to cultural preservation, as one must give thanks to the Creator both before and after harvest if the resources relied upon are to sustain themselves and make themselves continually available to meet human needs.

- The importance of language to transmit knowledge and teachings from one generation to the next – Native languages tend to wrap up many ideas into a word and involve a highly developed vocabulary for discussing particular activities, such as fishing methods, as well as more complex and abstract notions, such as the technology of maple sugar processing or the concepts of religion and other areas of cultural importance. Frequently, there are no English equivalents for native language words or expressions.

- The beneficial relationship between the use of traditional foods and the health and well-being community members – The holistic benefits of traditional food use include:

    - the improvement of diet and nutrient intake;
    - the prevention of chronic diseases (such as obesity, diabetes, cardiovascular diseases and hypertension, gall-bladder disease, and dental disease) associated with the consumption of non-traditional foods;
    - the opportunities for physical fitness and outdoor activities associated with harvesting traditional foods;
    - the opportunity to experience, learn, and promote cultural activities; and
    - the opportunity to develop personal qualities desired in tribal culture such as sharing, self-respect, pride, self-confidence, patience, humility and spirituality.

Against the background of these life ways, traditions and teachings, the Tribal Nations of the Great Lakes Basin view the exercise of their retained sovereign natural resources and environmental management responsibilities as a necessary element of their cultural preservation.

ATTACHMENT C

Tribal Nations within the United States Constitutional System – General Principles

1. United States Constitution's Indian Commerce Clause

The United States Constitution vests the power to regulate commerce with Indian Tribal Nations in the federal government. Some courts have called this authority "plenary." However, tribal powers persist unless Congress has otherwise provided or where a treaty otherwise provides.

The Constitution's "Supremacy Clause" makes the treaties and laws of Congress controlling over state laws. Thus, as a general rule, courts have taken the view that tribal sovereignty is dependent upon and subordinate to only the federal government, not the states.

Congress often acts to affirm tribal authority, rather than to restrict it. For example, Congress has specifically provided for a tribal role in the implementation of a number of key laws relevant to the GLRC, including:

- Clean Water Act, 33 U.S.C. sec. 1377.
- Clean Air Act, 42 U.S.C. sec. 7474(c).
- Safe Drinking Water Act [Public Health Service Act], 42 U.S.C. sec. 300j-11.
- Comprehensive Environmental Response Compensation and Liability Act, 42 U.S.C. sec. 9626.

2. Federal Treaty Obligations

For the most part, the relationship between the federal government and Tribal Nations has its roots in treaties. The United States signed over 300 treaties with Tribal Nations covering many subjects, including peace, land cession (hence the term "ceded territory"), removal of Tribal Nations from traditional homelands to new areas, and the establishment of reservations.

In 1871, Congress ended treaty making with Tribal Nations, but expressly validated and protected all rights under then-existing treaties. Under the Constitution's Supremacy Clause, these treaties remain part of the "law of the land" unless rescinded, abrogated, or amended by Congress. The courts have uniformly held that the United States remains obligated to uphold specific treaty provisions and to honor the overriding treaty purposes.

Today, federal relations with Tribal Nations are conducted pursuant to the terms of these treaties, as well as in accordance with Executive Orders, legislative enactments, and judicial decisions. Not all Tribal Nations signed treaties with the United States, and treaties are not the sole source of the federal government's responsibilities to Tribal Nations.

Treaties and treaty rights are particularly important to the Tribal Nations of the Great Lakes Basin. Specifically:

- Reservations secured through various treaties are intended to provide a "homeland," albeit a small vestige of once vast traditional territories, where traditional life ways and cultures based upon an interdependent relationship with the natural world can be carried out and preserved.

- For off-reservation ceded territories, the rights to hunt, fish and gather were reserved specifically for the purpose of securing the opportunity to continue to meet subsistence, economic, cultural, spiritual and medicinal needs through traditional life ways and harvest pursuits.

3. Federal Trust Responsibility

As a consequence of United States Supreme Court rulings that refer to Tribal Nations as "domestic dependent sovereigns," the United States, and all of its agencies, owe a special and unique duty to Tribal Nations – what the Supreme Court calls a "trust responsibility."

The trust responsibility arises from treaties, statutes, executive orders, and historical relations between the U.S. government and Tribal Nations. It may be viewed in terms of both general and specific components, although the line between the two is not always clear.

The general trust responsibility informs federal policy and includes the protection of the Tribal Nations' right to maintain themselves as distinct cultural and self-governing entities:

- It establishes a standard of good faith and fair dealings that applies to all federal agencies.

- It requires pre-decisional consultation with potentially affected Tribal Nations.

- Such consultation must be designed to facilitate an understanding of the nature of tribal rights/interests involved, the impacts of a proposed action on those rights/interests, and a Tribal Nation's own view of what should be done.

The specific component of the trust responsibility usually results only from some action of the government, such as a statute, treaty, or executive order.

Federal courts often discuss the specific trust responsibility in terms of a common-law trust that is subject to the "strictest fiduciary standards," and that generally has three elements: a trustee, which in this case is the U.S. government; a beneficiary, which may be a Tribal Nation or an individual Indian; and a corpus, for example tribal lands or funds from the sale of tribal timber assets.

Tribal Nations take a broad view of what is included in the "corpus" of the federal trust responsibility, particularly regarding both on- and off-reservation rights and the natural resources and ecosystems subject to those rights. In particular, they seek to hold the federal government responsible for fulfilling the purposes of treaties and ensuring that the Tribal Nations' treaty rights are protected.

4. Government-to-Government Relationship

The government-to-government relationship implicit in treaty making and in the federal trust responsibility has been expanded over time to include the full gamut of federal policy implementation by all federal agencies.

This relationship requires federal agencies to interact directly with Tribal Nations on a governmental basis, not merely as a segment of the general public. Federal agencies are to consult with tribal governments and their designated governmental representatives, to the greatest extent practical and as not otherwise prohibited by law, before taking actions that affect tribal lands, resources, people, or treaty rights.

This obligation is separate and distinct from obligations to states and other governments as well as from requirements affording the opportunity for general public input on federal decisions.

The government-to-government policy is long-standing, and recently has been continually affirmed from the terms of President Nixon through current-President Bush. President Clinton's Executive Order 13175 reaffirmed several responsibilities of federal agencies in this regard, and, on September 23, 2004, President Bush reiterated his Administration's adherence to the principles stated in his predecessor's Order, specifically to a government-to-government relationship and support for tribal sovereignty and self-determination.

Many states, such as Michigan and Wisconsin, have adopted government-to-government consultation policies similar to that required of the federal government.

HAUDENOSAUNEE
Mohawk • Oneida • Onondaga • Cayuga • Seneca • Tuscarora

ENVIRONMENTAL TASK FORCE
Akwesasne Mohawk Territory
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September 9, 2005

Great Lakes Regional Collaboration
c/o U.S. Environmental Protection Agency Great Lakes
National Program Office
77 W. Jackson Boulevard (G-17J)
Chicago, Illinois 60604-3511

To Whom It May Concern:

On behalf of the Haudenosaunee Environmental Task Force, I send greetings and hopes this day finds you in good health and spirits.

HETF is pleased to present a Position Paper on the Great Lakes. Our comments incorporate many facets of the Great Lakes and the Great Lakes Basin. As indigenous people of this land, North America, we challenge all people to use a holistic view of the Great Lakes. Humans are not separate from Creation. As people of this continent, we must realize humans are a part of the environment. The existence of Creation is also the survival of humankind.

Our original teachings from the Creator are essential to our culture. The Creator instructed all parts of creation of their responsibilities. The waters have a responsibility to provide nourishment to Mother Earth, to plant and animals as well as to humans. Humans have the responsibility to honor and give thanks for all parts of Creation. As different entities, we do not interfere with each other's duties. Human-made pollution and diversions are a few of the abuses towards the waters and their duties. Haudenosaunee teachings warn us that if we continue abusing parts of Creation, those elements will vanish. Interlopers must look beyond their economic needs and honor the sacredness of the Great Lakes and its watershed.

HETF has many concerns about the Great Lakes in regard to the Great Lakes Watershed. All decisions must be carefully considered to assess the impact on the environment, society, and on seven future generations. Our actions of today will affect all our children

and our children's children physically, emotionally and spiritually.

Native Americans have lived in this area from time immemorial. Lake Ontario is a Mohawk word meaning beautiful Lake. Native American hunting, fishing, gathering and water rights are protected in Treaties made with the fledging governments of the United States and Canada. Those rights have never been relinquished. However, accessibility to damned waters constrains this use. Pollution prohibits using the waterways as a food and hydrating source. We support rectifying the damages of the past. Consultation is essential to rectifying those wrongs. We are open to consultation and partnering as we now extend you our hand in peace, friendship and respect.

As humans, we have an obligation to voice our concern of the damage to Creation. Waters, birds, animals, fish, air and pollution know no man-imposed boundaries. As humans we must look beyond those boundaries and do what is best for the Great Lakes, its watershed and all creatures sustained by this entity. HETF's position paper is being submitted as a voice for Creation.

Now our minds are one.

In Peace

Joyce King
Acting Director
Haudenosaunee Environmental Task Force

HAUDENOSAUNEE ENVIRONMENTAL TASK FORCE POSITION ON THE GREAT LAKES

TABLE OF CONTENTS

THANKSGIVING ADDRESS
GREETINGS TO THE NATURAL WORLD

The People
Today we have gathered and we see that the cycles of life continue. We have been given the duty to live in balance and harmony with each other and all living things. So now, we bring our minds together as one as we given greetings and thanks to each other as People.
Now our minds are one.

The Earth Mother
We are all thankful to our Mother, the Earth, for she gives us all that we need for life. She supports our feet as we walk about upon her. It gives us joy that she continues to care for us as she has from the beginning of time. To our Mother, we send greetings and thanks.
Now our minds are one.

The Waters
We give thanks to all the Waters of the world for quenching our thirst and providing us with strength. Water is life. We know its power in many forms – waterfalls and rain, mists and streams, rivers and oceans. With one mind, we send greetings and thanks to the spirit of Water.
Now our minds are one.

The Fish
We turn our minds to all the Fish life in the water. They were instructed to cleanse and purify the water. They also give themselves as food. We are grateful that we can still find pure water. So, we turn now to the Fish and send our greetings and thanks.
Now our minds are one.

The Plants
Now we turn toward the vast fields of Plant life. As far as the eye can see, the Plants grow, working many wonders. They sustain many life forms. With our minds gathered together, we give thanks and look forward to seeing Plant life for many generations to come.
Now our minds are one.

The Food Plants
With one mind, we turn to honor and thank all the Food Plants we harvest from the garden. Since the beginning of time, the grains, vegetables, beans and berries have helped the people survive. Many other living things draw strength from them, too. We gather all the Plant Foods together as one and send them greetings and thanks.
Now are minds are one.

The Medicine Herbs
Now we turn to all the Medicine herbs of the world. From the beginning, they were instructed to take away sickness. They are always waiting and ready to heal us. We are happy there are still among us those special few who remember how to use these plants for healing. With one mind, we send greetings and thanks to the Medicines and to the keepers of the Medicines.
Now our minds are one.

The Animals
We gather our minds together to send greetings and thanks to all the Animal life in the world. They have many things to teach us as people. We see them near our homes and in the deep forests. We are glad they are still here and we hope that it wall always be so.
Now our minds are one.

The Trees
We now turn our thoughts to the Tress. The Earth has many families of Trees who have their own instructions and uses. Some provide us with shelter and shade, others with fruit, beauty and other useful things. Many peoples of the world use a Tree as a symbol of peace and strength. With one mind, we greet and thank the Tree life.
Now our minds are one.

The Birds
We put our minds together as one and thank all the Birds who move and fly about over our heads. The Creator gave them beautiful songs. Each day they remind us to enjoy and appreciate life. The Eagle was chosen to be their leader. To all the Birds – from the smallest to the largest – we send our joyful greetings and thanks.
Now our minds are one.

The Four Winds
We are all thankful to the powers we know as the Four Winds. We hear their voices in the moving air as they refresh us and purify the air we breathe. They help to bring the change of season. From the four directions they come, bringing our messages and giving us strength. With one minds, we send our greetings and thanks to the Four Winds.
Now our minds are one.

The Thunderers
Now we turn to the west where our Grandfathers, the Thunder Beings, live. With lightning and thundering voices, they bring with them the water that renews life. We bring our minds together as one to send greetings and thanks to our Grandfathers, the Thunderers.
Now our minds are one.

The Sun
We now send greetings and thanks to our eldest Brother, the Sun. Each day without fail, he travels the sky from east to west, bringing the light of a new day. He is the source of all the fires of life. With one mind, we send greetings and thanks to our Brother, the Sun.
Now our minds are one.

Grandmother Moon
We put our minds together and give thanks to our oldest Grandmother, the Moon, who lights the night time sky. She is the leader of women all over the world, and she governs the movement of the ocean tides. By her changing face we measure time, and it is the Moon who watches over the arrival of children hear on Earth. With one minds, we send greetings and thanks to our Grandmother, the Moon.
Now our minds are one.

The Stars
We give thanks to the Stars who are spread across the sky like jewelry. We see them in the night, helping the Moon to light the darkness and bringing dew to the gardens and growing things. When we travel at night, they guide us home. With our minds gathered together as one, we send greetings and thanks to all the Stars.
Now our minds are one.

The Enlightened Teachers
We gather our minds to greet and thank the enlightened Teachers who have come to help throughout the ages. When we forget how to live in harmony, they remind us of the way we were instructed to live as people. With one mind, we send greetings and thanks to these caring Teachers.
Now our minds are one.

The Creator
Now we turn our thoughts to the Creator, or Great Spirit, and send greetings and thanks for all the gifts of Creation. Everything we need to live a good life is here on this Mother Earth. For all the love that is still around us, we gather our minds together as one and send our choicest words of greetings and thanks to the Creator.
Now our minds are one.

Closing Words
We have now arrived at the place where we end our words. Of all the things we have named, it was not our intention to leave anything out. If something was forgotten, we leave it to each individual to send such greetings and thanks in their own way.
Now are minds are one.

HAUDENOSAUNEE ENVIRONMENTAL TASK FORCE

POSTION ON THE GREAT LAKES

EXECUTIVE SUMMARY

"We, Haudenosaunee, remain indebted to the foresight of our Chiefs and Clan Mothers, who had the wisdom to negotiate an agreement that reaches into our lives today..."

The Haudenosaunee have lived in peace and harmony with the natural world as the indigenous inhabitants of Turtle Island/North American. We have fought and struggled to preserve our homelands for the benefit of the seventh generation yet to be born. We want our grandchildren and their grandchildren to be able to enjoy and appreciate the earth-based culture and bounty of the natural world.

As people upon this earth, we have a great responsibility. The Creator has placed all things needed for our survival. As instructed by the Creator, our responsibility is to protect and preserve all he has created and to give thanks to Creation that assists our continued existence. Naturalized knowledge systems of the Haudenosaunee have taught our people about our homelands in the Great Lakes Basin. The Natural Knowledge integrates physical, social and spiritual aspects of our surroundings. As newcomers to North American, European colonists, and the people to follow them into this land,

must come to realize we share one dish: resources that are dwindling as we speak. What remains of renewable resources must be protected.

As keepers of traditional knowledge, the Haudenosaunee have preserved the original instructions given by the Creator. We must continue to give thanks everyday to those sacred waters for the duties and responsibilities they bestow onto the natural world. The waters provide nourishment and sustenance to our Mother Earth, quench the thirst of all life forms. They maintain balance and harmony throughout the natural world. As Haudenosaunee, the natural course of the water is not disturbed. Indeed, our traditional teachings about sacred waters remain strong.

The Haudenosaunee have a responsibility to protect the waters. Haudenosaunee treaty language is core to environmental protection of the waters. The terms of treaties state: "...As long as the grasses grow and the rivers flow". Treaties are the highest form of agreement between nations. Those agreements are considered Treaties under international law. Treaties exist between the Haudenosaunee and the United States of America and Great Britain. The early formal relationships recognized the Haudenosaunee and the United States of American as sovereign nations. As a result, the U.S. Federal, State, County and private U.S. citizens have a responsibility to respect the terms of the treaties. Sovereignty, jurisdiction and cultural lifestyles must also be respected. Haudenosaunee hunting, fishing and gathering rights were never ceded with treaties made with the United States. Treaties between nations also carry a great responsibility.

As well as international treaties, the Winter's Doctrine has been upheld in the U.S. Supreme Court giving Tribes waters rights and resources from water. Under the Winter's Doctrine, which is a series of cases beginning with Winters v. U.S. 2017 U.S. 564 (1908), Indian nations have a reserved right to an amount of water necessary to fulfill the purpose of the reserved lands. These rights exist regardless if the treaty, statute or executive order is absent of specific language securing water

rights. The rights are reserved, by implication, to sufficiently fulfill the present and future needs of the reservation. The Great Lakes Basin, which includes the St. Lawrence River, is a historic portion of Haudenosaunee hunting, fishing and gathering territory. The Great Lakes and surrounding land became an extensive part of the Haudenosaunee Territory when the Peacemaker joined the Five Nations of the Haudenosaunee. The Haudenosaunee have legal rights and status that are superior and exist beyond the legal status and rights as advocated by the United States and Canada. Canada must respect treaties and agreements made under British rule.

There are no people who can claim solitude and self sufficiency without assistance from Creation or from one another. As people within the ecosystems of North America, we must come to the realization there are different cultural values and different worldviews. However, we need to proceed beyond our restricted thinking and progress to a productive dialogue concerning the natural resources of this land. With this, we extend our hand in peace and friendship to the interested parties for the benefit of the Great Lakes Basin.

The Haudenosaunee People

Our people have an ancient tradition of nationhood that developed long before contact with the Europeans. Our traditional values are the basis for our social and political institutions, as well as our sense of our place within the natural order. Long ago, we developed our own answers to the questions the European philosophers and political theorists have been asking for centuries. Upon the continent of North American, prior to the landfall of the first white man, a great league of peace was formed. The inspiration for the founding of the league came from a messenger. We call him the Peacemaker.

The Peacemaker was a spiritual being, fulfilling the mission of organizing warring Nations into a confederation, governed by Gianashanagowa, the Great Law of Peace. This is a long history. It is too long to recount here. Suffice to say, it is a great epic, the equal of any in the European tradition. It tells of war and destruction that culminated on the lake now called Onondaga. After many years of hard work, the Peacemaker gathered the warring leaders, who had been transformed into rational human beings by the wisdom of his teachings, in a grand council, and began to instruct them as to how the great league of peace would work.

He, again, organized the families into clans, and according to oral history, leaders of the clans were raised. He established that the league of peace would be matrilineal and that each clan would have a clan mother. Thus, he established in law the equal rights of women. He raised the leaders of each clan, two men, on the principal leader and the second, his partner. They were to work together for the good of the people. He called these two men 'Hoyanah' or the 'good minds', the peacemakers. They were to represent their clan in council. Thus, he established the principle of representation of people in government. Henceforth, he said, these men will be chosen by the clan mother, freely using her insight and wisdom. Any decisions would be ratified by full consensus of the clans, chiefs, and, Grand Council of Chiefs of the Five Nations.

Then he also made two houses in each Nation. One he called the Long House and the other he called the Mud House. The houses would work together in ceremony and council, establishing the inner source of vitality and dynamics necessary for community. He made two houses in the Grand Council, once called the Younger Brothers, consisting of the Oneida and the Cayuga Nation and later, enlarged to include the Tuscarora. The other house was the Elder Brothers, consisting of the Mohawks, the Onondaga whom he made the Firekeepers, and the Senecas who were the Keepers of the Western Door. Thus, he established in North American, the principle of a bicameral form of government that continues up to this day.

This council still governs. Its first duty is to carry on the sacred ceremonies. The second duty is to meet in council for the welfare of the people. Now the Peacemaker made the house, and the rafters of the house were the laws that he laid down, and he called us **Haudenosaunee, the People of the Longhouse.**

Part I Principles

1.1 Haudenosaunee Thanksgiving Address

Whenever the Haudenosaunee gather, our meetings are started and ended with the Thanksgiving Address. We have presented an English summary of the Thanksgiving Address at the beginning of this document. "The Words That Come Before All Else" is how we see and understand the world. It has a deliberate structure to it. It starts with the people and moves outward and upward from the earth to the waters to the plants and four legged creatures to the bird life to the sky world and concludes with the Creator who made all life with nothing lacking.

The Thanksgiving Address reminds each person present that human beings are a small part of a much larger natural world. Its structure is meant to address and return thanks to each part of the natural world separately. After each part, the speaker states that "we who are gathered here have put our minds together for this purpose," and the assembled people indicate their agreement.

The Thanksgiving Address reminds those gathered that they have duties and responsibilities, not only to themselves, but also to the entire natural world and the rest of creation. The message is simple: as each part of the natural world continues to fulfill its responsibilities, so we, as humans, have our own responsibilities to fulfill to maintain the world as it should be.

1.2 Hiawatha Belt/One Dish, One Spoon

The symbols presented in the wampum, more commonly known as the "Hiawatha Belt" represents the first international agreement between the different Haudenosaunee Nations. It signifies the union or confederacy of five Nations, from east to west: Mohawk, Oneida, Onondaga, Cayuga and Seneca.

Through oral tradition, the wampum is recited that peace will prevail in our lands. In the center of the wampum, a Tree of Peace is found. Underneath the tree, the Nations collectively agreed to bury hatred, bad thoughts and words that promote weapons of war. The Tree, a white pine, is the symbol of peace.

When the Peacemaker introduced the Great Tree of Peace, he talked about the tree having four white roots that spread peace in all directions. Any person or Nation

would be able to trace the roots to its source and find protection under the Great Tree.

The wampum or treaty belt, also symbolized a concept of one dish/one spoon among the Haudenosaunee. Before this great Confederacy came together, many arguments arose. The Nations were fighting over hunting grounds. This led to bloodshed and Nation warfare as well as a loose organization based on warrior-based leaders. There was also interfamilial fighting.

The Peacemaker was born at this time of great despair. He cognized and proselytized the Great Law of Peace, establishing the three principles of Peace, Power and Righteousness within the concept of one dish/one spoon. All Haudenosaunee and other Indigenous Nations agreeing to accept the principles of the Great Law of Peace, also agree to the concept of sharing one dish and using one spoon.

> "We shall now do this: We shall only have one dish (or bowl) in which will be placed one beaver tail and we shall all have co-equal right to it, and there shall be no knife in it, there would be danger that it might cut some one and blood would thereby be shed."[1]

Therefore, Natural Resources found on Mother Earth, would belong collectively. Symbolically, Natural Resources are in one dish: Nations would be eating out of this one dish: taking only what was necessary and leaving whatever was available for others and enough to propagate for the future generations.

At one time, there was a knife in the middle of the bowl, but this was a weapon and could become harmful to each other. When the Tree of Peace was planted, the weapons of war were buried. The knife was replaced by a spoon and bad feelings and bad intentions between Nations would be eliminated. Upon accepting this Great Peace, the Mohawks could then hunt in Oneida Territory and the Oneidas could hunt in Seneca Territory, provided hunters took only what was needed to feed their families.

The One Dish/One Spoon symbolizes our collective rights and flow from this agreement among the Haudenosaunee Nations. Ever since this treaty was enacted and the Confederacy of the Haudenosaunee was formed, no one person shall own the land since it belongs to everyone. It included the other beings in the natural world and the unborn generations yet to come.

1.3 Great Law: Guiding Principles

Sken:nen, Ka'nikonriio, Ka'satstensera

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[1] Jemison, Peter G. & Schein, Anna, Ed. Treaty of Canandaigua Clear Light Publishers, Santa Fe, NM 2000

The principles of sken:nen, ka'nikonriio and ka'satstensera serve as the foundation and guiding force for the Haudenosaunee. Since the beginning of time, our Creator has related to all people to strive for peace. As individuals, communities and Nations, we must constantly strive to talk, live and breathe peace. **Sken:nen** (peace) is more that just the absence of conflict or war. It is engrained into our culture, spirituality: social and political foundations. Peace has been defined as "the active striving of humans for the purpose of establishing universal justice… True peace is the product of a unified people on the path of Righteousness and Reason - the ability to enact the principles of Peace through education, public opinion and political and when necessary, military unity. It is the product of a spiritually conscious society using its abilities of reason"[2]

When we work for peace, we develop **Ka'nikonriio** (a good mind) a good way of thinking.
Kariwiio (the good word) is part of ka'nikonriio and refers to "the shared ideology of the people using their purest and most unselfish minds. It occurs when the people put their minds and emotions in harmony with the flow of the universe and the intentions of the Good Mind or the Great Creator. The principles of Righteousness demand that all thoughts of prejudice, privilege or superiority be swept away and that recognition be given to the reality that the creation is intended for the benefit of all equally – even the birds and animals, the trees and the insects, as well as the humans… Reason is seen as the skill which humans must be encouraged to acquire in order that the objectives of justice may be attained and no one's rights abused."[1]

When we work for peace and a good mind, we develop K**a'satstensera** (strength). Strength flows from the power of the good mind to use rational thinking and persuasion to channel the inherent good will of humans to work towards peace, justice and unity to prevent the abuse of human beings and mother earth.

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[2] Akwesasne Notes, Mohawk Nation. Basic Call to Consciousness. Book Publishing Co. Summertown TN 1978

Part II Treaty Relationships

Treaties are the highest form of agreement between nations, the place that peoples, their laws and governments meet. The historical records show hundreds of formal councils between the Haudenosaunee and the French, British and Untied States governments in North America. The Agreements that flowed from each of these councils should be considered a 'treaty' under the laws of Canada or the United States. For the Haudenosaunee, these agreements are like stones in a river that mark a place in its flow – what has remained important is the relationships established by formal treaty between the Confederacy and other nations. Enduring symbols of those relationships, which embody peace, respect, trust and friendship, include the Silver Covenant Chain and the Two Row Wampum. Other treaties, which provide for all aspects of international relations, including war and peace, trade and commerce, criminal jurisdiction and extradition – All flow from the foundation established by those relationship.

For nearly two hundred years after the arrival of the Europeans in the Great Lakes region of North America, the process of treaty making was based on Haudenosaunee protocol. This was not surprising. The colonists were few and weak, and the process worked remarkable well. The result of Haudenosaunee council processes was a clear relationship and firm peace.

2.1 TWO ROW WAMPUM

The Two Row Wampum is a treaty created in the 17th century to record an agreement between the Haudenosaunee and the Dutch settlers in Eastern New York. The belt consists of alternating rows of purple and white wampum running the length of the belt. The two purple rows symbolize two vessels traveling the river of life together, side by side. One vessel, a ship, symbolized the Dutch. The other vessel, a canoe, symbolized the Haudenosaunee. The meaning behind this treaty belt brought together a concept of two vessels traveling the river together and as they travel side by side, they are to help each other, from time to time, as people are meant to do. The people are to stay within in each other's respective vessel.

The vessels are connected by three white rows of wampum. They symbolize three principles: sken:nen or peace, ka'nikonriio or the good mind, and ka'satstensera or strength. Between Nations, the words are extrapolated as peace, friendship and respect. These principles guide the Haudenosaunee in our relationships today. *Peace* requires action. We must have good communication to have a positive relationship. A good mind requires that we work towards common interests rather than focus on our differences: *respect*. Strength arises from following these first two principles and the relationship becomes healthy: *friendship*.

2.2 THE CANANDAIGUA TREATY OF 1794

The Canandaigua Treaty is also known as the Timothy Pickering Treaty and the George
Washington Covenant Treaty. There is a wampum belt in the possession of the Onondaga Nation that is six feet in length. It has thirteen figures holding hands with two native figures. The two native figures are on both sides of a house that is in the center of the belt. This was made to commemorate the Treaty of Canandaigua in 1794. The Canandaigua Treaty was signed by the Chiefs of the Six Nations of the Haudenosaunee Confederacy and representatives for the United States government on November 11, 1794, and ratified January 21, 1795.

> *"George Washington sent out Timothy Pickering to meet with us. We gathered at Canandaigua, New York, in July of 1794. There for a six-month period we discussed the terms of an agreement between our peoples. Many issues were discussed during that six-month period, and these discussions were brought back to our separate nations. On November 11, 1794, we finally signed the treaty. This treaty was between the Haudenosaunee (the Six Nations) and the United States. Again, Article I states, 'Let there be peace and friendship between our two peoples." This treaty was ratified by the United States Congress and was signed by George Washington, the president of the United States.'"* [3]

A Living Treaty

Every August, the federal government sends treaty cloth and salt to members of the Haudenosaunee. At one time, $4,500.00 bought a lot of cloth: calico, cotton prints, etc. Because there were no lawyers present in 1794, there was no cost of living clause. Today, only muslin cloth is purchased, but it is still important because it demonstrated the existence of this living treaty.

A Parallel Process

In the spirit of the Two Row Wampum, Article VII of the Canandaigua Treaty is interpreted as a parallel process: two legal jurisdictions. In the event of a crime, there is reciprocity in the treaty to address the crimes or wrongs of their respective Nation/society. The section states that in the event of a crime, the two parties will pursue prudent measures involving the president or the superintendent until some other "equitable' provision shall be made. Since the birth of the Canandaigua Treaty, the Haudenosaunee, through its Grand Council, have exercised this right through various letters to the United States President.

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[3] Jemison, Peter G. & Schein, Anna, Ed. Treaty of Canandaigua (Introduction by P. G.Jemison) Clear Light Publishing Santa Fe, NM, 2000 p 30

Citizenship

We are not citizens of the United States. We are citizens of the Onondaga Nation. We do not vote in your elections, nor are we a part of the Democratic or Republican parties. We do not accept federal funds from the United States. The funds and services that we do receive come to us as *treaty obligations*. As a sovereign nation, we do not accept the federal and state laws that violate the concepts and interpretations of our treaties, as we understand these treaties.

Our mandate of today is the same as it was yesterday. What we see today, we should preserve, so that our great-great-grandchildren will be able to enjoy the same things that we see today. If we have fresh water, then let there be fresh water three or four hundred years from now. If we have fresh air, then let there be fresh air. Let us lieve together in peace and harmony with each other, the forces of nature, and the environment, forever.

Dawnaytoh,
Chief Powless Jr., Onondaga Nation

2.3 THE JAY TREATY

In 1794, Washington nominated Supreme Court Chief Justice John Jay as an envoy to conclude a treaty of peace and commerce. Justice Jay negotiated a definitive treaty of friendship, commerce, and navigation with Britain. The Jay Treaty solved some of the most important matters of dispute between the two nations. The Treaty was ratified June 24, 1775. The appropriations were finally made, but only after one the greatest political debates in American history.

Article III of the Jay Treaty provided and assured the Indians free and unrestricted passage and trade across the border. It was later reaffirmed in the Treaty of Ghent (1814).

Many scholars make note that the Jay Treaty was abrogated during the War of 1812. However, looking at the historical records, speeches and interviews were made with various officials involved during the war's closure. Hence, the Treaty of Ghent was reached. By all accounts, the rights of the Haudenosaunee Nations in the Jay Treaty provisions were reaffirmed in the Treaty of Ghent. Henry Clay, one of the U.S. negotiators at the Treaty of Ghent, described what he was absolutely certain Indian rights under the Treaty of Ghent. Furthermore, he noted that the Indian nations had the right 'quietly to possess and enjoy its lands, subject to no other limitation than that, when sold, they can only be sold to the United States"

Part III Into a New Beginning

The United States and the Haudenosaunee have co-existed for over two centuries. During this time, the relationship between us has, at times, been strained and adversarial. In building a relationship with those of other nations, we recall the words of the Two Row Wampum: what should be between us is Peace, Friendship and Respect. What is actually and presently between us are legal issues, grievances, hurt and frustrations.

Today, we send you greetings and extend our hand in peace and friendship in promoting mutual respect between two Nations living within this river of life, side by side and in parallel paths.

3.1 Three Bare Words

As giving thanks was the first step in peoples coming together, the condolence is second. When nations met, they would condole each other, to raise up and clear each other's minds, thoughts and bodies of distractions before they could get down to the business of peace. The strings used by the nations to perform the condolence at the beginning of Treaty Councils are the descendants of the Peacemaker's first strings, as well as of those used within the Confederacy to preserve and promote the peace.

The Ceremony of Condolence is the threshold to peace. A clear, rational; 'good' mind accepts peace as a matter of reason. The Good Mind accepts and welcomes the unity of nations brought together in peace.

Each of the 'words' of the Condolence describes a particular hurt that has come from the grief and loss. Then the speaker explains how that hurt has affected the people who are gathered together. Then through his words, he removes or heals the hurt and grief. The condolence is a healing for troubled minds.

The 'very few words' are also called the "Three Bare Words". They are to clear they eyes, ears and throat of those who have traveled. They are 'bare' because they are preliminary and are usually spoken without wampum (that is the speaker's hands are bare.) The Three Bare Words are also the first three parts of the 'full' condolence ceremony.
Afterwards, the hosts take the visitors by the hand, in affection. They bring them to the place of council. There, the words of condolence are spoken:

Today, we have joined to put our minds together, but before this council can proceed we need to offer you condolence. The Ceremony of Condolence is the threshold to Peace. The Good Mind, a clear and rational mind, accepts peace as a matter of reason. The Good Mind accepts and welcomes the unity of our nations brought together in peace.

Your eyes are constantly shedding tears for the ones who have departed, who have been gathered to the Creator's land. Because of these tears, you can no longer see your brothers

clearly, and your ability to see the world around you have been affected. With this word, we wipe the tears from your eyes, so that you may once again see clearly.

The grief and sorrow you are suffering have stopped up your ears, so that you can no longer hear clearly what is being said to you. With this we once again open your ears, so that you can hear clearly

what is being said.

Your throats have been stopped up with grief, so that you are no longer able to speak. With this we once again open your throats, so that you will be able to say what you wish, without obstruction.

With the purest white deerskin the insides of your bodies are cleaned of any impurities that may have lodged there, so that you can go about your lives in comfort and peace.

The memory of the people who have departed sometimes takes the form of the sight of blood on the space where you sit as Chiefs. With this we remove the bloodstains from your mat and once again prepare a safe and comfortable place for you to sit.

In your sorrow and grief you sit in darkness in your minds. You cannot see your brothers who seek to raise your spirits once again. With this we remove the darkness you are seeing and feeling.

When you have suffered a great loss, you sometimes cannot see the sky above and around you: you are blind to the beauties of Creation. With this word we restore the sight of the sky to your eyes, so that you can gaze about in calm and beauty.

In your sorrow and grief the sun is lost to you and you can no loger feel his warmth and the light he casts about us. With this we restore the sun to the sky so that you can once again see the world around you.

You have traveled far, and your path has been difficult. There are thorns in your feet, and you are in pain from your journey. With this, we remove the thorns from your feet and once again make you comfortable.

The memory of the people who have passed away is refreshed in your minds whenever you pass their graves. With this we remove the sight of the graves and level the earth over them, so that their sight no longer disturbs your peace of mind.

When grief and sorrow strike the people, their fires are sometimes scattered, as their thoughts are in disarray. With this we gather together the embers of your fire and rekindle the fire so that it can once again give you warmth and light.

Not only a person's close family but all the people suffer when a respected person passes away. With this we once again raise up the minds of the women and the young men, that they may resume their responsibility of supporting and advising the Chiefs in their deliberations.

There are times when grief causes a person to behave in a way that is beyond reason, where they can injure or be injured by bad medicine. This can happen on earth, it is known to happen. With this we remove any shadow of insanity and all bad medicine from your minds, so that you can once again resume your place in our councils and our thoughts with a clear mind.

3.2 Silver Covenant Chain of Friendship Treaty

Oral and written tradition explains that when the British first met the Mohawks they took each other by the hand in friendship. Later, the British ship was tied to a tree with a rope. Since rope frays over time and the parties wished their friendship to be stronger, they replaced the rope with an iron chain. When the iron chain showed signs of rust, they replaced it with one of silver. When it was clear the tree could be shaken by high winds, and the Confederacy wished to expand the friendship, the other end of the chain was tied to the mountains on Onondaga, the fireplace of the Confederacy.

> And later:
> *"We embrace this opportunity to rekindle the ancient council fore which formerly burnt as bright as the sun in this place and to heap on it so much fuel that it may never be extinguished and also to renew the ancient covenant chain with your, which you knew has always been kept bright and clean, without any stain or rust and which by this belt we now strengthen that forever hereafter you and we may have but One Heart, One Mind, One Body and One Belief.*
>
> *By this Belt, we, the Twelve United Colonies renew the old Covenant Chain by which our forefathers in their great wisdom thought proper to bind us and you, our brothers, of the Six Nations together when they first landed at this place and if any of the links of this great chain should have received any rust, we now brighten it and make it shine like silver. As God has put it into our hearts to love the Six Nations and their allies we now make the chain of Friendship so strong, we, hope through the favour and mercy of the good Spirit that it will remain strong and bright while the sun shines and waters run.*
>
> *By this Belt we remove every difficulty that may be in the great road that runs through the middle of our Country and we will also clear up and open all the small roads that lead into the great one. We will take out every thorn, briar and stone so that when any of our brothers of the Six Nations have an inclination to see and talk with any of our brethren of the Twelve Untied Colonies they may pass safely without being scratched or bruised and we are further determined by the assistance of God to keep our roads open and free for the Six Nations as long as this earth remains."*[4]

The Covenant Chain was more than a symbolic reference to the making of peaceful relations. It was also the actual confederation of Native nations and their allies, tied together with the colonies. To the Haudenosaunee, the Covenant Chain was the means by they could attach themselves to other Native American nations who were not in the confederacy, as well as the European colonists. The Covenant Chain was also a way to wipe the slate clean should there be transgressions.

The Covenant Chain of Peace, itself a metaphor for the preferred treaty relationship, is based upon the older metaphor of men linking arms as a show of peace. The links of a chain reminded the old timers of this linking of arms to show solidarity and peacefulness. A renewal of the commitments of a treaty agreement therefore became known as "polishing the chain" to remove any rust or

[4] Statement made by the Commissioners appointed by the Twelve United Colonies to make a treaty with the Six Nations at the City of Albany on Friday, the 25th day of August, 1775.

dirt (metaphors for bad conduct) as a way of renewing the terms and spirit of the agreement.

There were said to be three links to the original chain, representing the concepts of peace, friendship and respect, forever. The Haudenosaunee believe that the Covenant Chain is an idea of a path that connects the two nations, a path that promotes peace, meaning that they are free to travel to each other to talk for help and support.

3.3 Re-Polishing the Silver Covenant Chain Building Relationships Between the United States and the Haudenosaunee

> *"The League of the Haudenosaunee, more commonly known as the Six Nations (Mohawk, Oneida, Onondaga, Cayuga, Seneca and Tuscarora Nations, send its greetings to the men, women and children of other nations of this land. The league of the Haudenosaunee continues as a sovereign people on the soil it has occupied on Turtle Island since time immemorial, and we extend friendship to all who recognize our constitutional government and who desire peaceful relations".* (Excerpt from the Haudenosaunee passport)

How We Will Dialogue With Each Other

Since the arrival of the Europeans on North America, the Haudenosaunee have strived to have peaceful relations with peoples from other nations. The protocols and processes underlying these relations have been embodied in instruments such as the Two Row Wampum, Silver Covenant Chain, and the Canandaigua Treaty of 1794.

The Haudenosaunee have had a relationship with the United States since the thirteen colonies were considering forming a union. On September 16, 1987, the 100th Congress passed a joint resolution acknowledging the contributions of the Haudenosaunee to the development of the United States Constitution.

Today, we need to take softest and cleanest cloth to polish the Silver Covenant Chain, to remove the tarnish that has accumulated over the years and to strengthen our relationship of peace, friendship and respect between the two confederacies: the United States and the Haudenosaunee. We need to brighten the Chain of Friendship as our forefathers did.

Our dialogue is a desire to maintain the peace between us. When we have peace, we can reach across the fire and greet each other in friendship. We need to respond to each other's differences and similarities in a respectful way. We need to recognize each other as sovereigns, respecting each other's customs, languages, and form of government.

As Haudenosaunee, we still speak our language, conduct traditional ceremonies and govern our people by a system installed centuries ago by the Peacemaker. Our spiritual and political system has not been separated. We have not entered the ship of the United States. We are Nations separate from the United States citizens as we keep our Nation citizenship within the Haudenosaunee. We are different from other people.

The younger generations will benefit from a renewal of the Silver Covenant Chain of Friendship and rekindling of our fires. Our youth will be proud of who they are and not feel hopeless for their future as a people. The youth of the United States can hold their heads up high knowing their leaders were keeping the promise of their forefathers in not breaking their promises to the Onkwehonweh (Native Americans).

It is proposed that this dialogue will provide the basis for the relationship the Haudenosaunee have with the United States. It will serve to educate your people on Haudenosaunee protocol and processes. It will, hopefully, bring consistency to an inconsistent relationship for the natural resources of this land.

Part IV Haudenosaunee Environment

4.1 Environmental Philosophy of the Haudenosaunee

Today, we face new environmental issues our ancestors never had to consider. There were no polluting factories, gasoline stations, or human made chemicals like PCBs to harm the environment. Waterways followed their natural path. ***As people of this land, we took great care to keep the earth and its waters as pristine as possible, known in the past as common sense, known now as good environmental practices.*** There was no need for formalized environmental regulations. The challenge before us is finding ways to protect the natural world while preserving our unique relationship with it.

Over the past twenty years, the United States federal government has increasingly recognized the inherent sovereignty of Indian nations, their right to self-determination. Part of the inherent sovereignty of Indian nations is the power to create, regulate and assume primacy over environmental issues. The federal government recognizes this right by treating Indian tribes as states under numerous provisions of federal environmental laws.

4.2 Environmental Hazards and Impacts in Haudenosaunee Territories

Over the past five hundred years, the Haudenosaunee have observed and recorded the impacts of the European settlers on America. Our people tried to warn the colonists of their practices that do not sustain the earth and will eventually destroy both ourselves and the newcomers. Like children possessed by a new toy, they the newcomers did not listen. The environmental destruction we see today is the result. Our communities have suffered the destruction of their natural resources. Our Nations have been confined to small tracts of land. Our Confederacy has been mocked by the young countries which do not understand the world. However, as more time passes, western society has begun to feel the limit or of our resources and the message of the Haudenosaunee has begun to be heard.

Knowledge long believed to be lost has exerted itself and the new science of ecology has resurged. Conservation and preservation are once again the principles of the modern day society, but still, arrogance of conventional science does not completely acknowledge the people who practice true conservation and peace.

Naturalized knowledge systems of the Haudenosaunee have taught how our people should to live in our territories. This knowledge system is based not only on experimentation and observation but also on feelings and emotions. The Haudenosaunee Knowledge System endeavors to integrated the physical, social and spiritual states into a cohesive force for the better of all and future

generations. To this end, the Haudenosaunee have vigorously advanced this knowledge which would progress our stance as an equal voice in the global systems

As early as the 1700's, histories indicate that our indigenous knowledge was very valuable to the colonial governments and people. This early knowledge had been meticulously tested
over the centuries and proved correct. Our people have never been adverse to evaluating new technologies, rejecting those that are harmful and incorporating those that are useful. Western science is no exception. Our children have been trained in the sciences and tempered in the spirit of our people. Science and spirit are two very powerful tools to save the world.

4.3 Haudenosaunee Environmental Task Force

In 1992, in accordance with the Great Law of Peace, the Grand Council passed and agreed, based on Haudenosaunee protocols and cultural beliefs, to establish the Haudenosaunee Environmental Task Force (HETF). HETF is composed of delegates that include Haudenosaunee leaders, environmental technicians and scientists, chosen by each of the Haudenosaunee Nations who are committed to identifying environmental problems in their communities and working to find solutions to these problems.

The leaders of the Haudenosaunee have always considered three principles when making decisions: will a decision threaten peace, the natural world or future generations? The delegates of HETF have accepted these principles and use the following questions to guide us in our decision making:

- What effect will our decision have on peace?
- What effect will our decision have on the natural world?
- What effect will our decision have on future generations?

The mission of HETF is to assist Haudenosaunee Nations in their efforts to conserve, preserve, protect and restore their environmental, natural and cultural resources; to promote the health and survival of the sacred web of life for future generations; to support other indigenous Nations working on environmental issues; and to fulfill our responsibilities to the natural world as our Creator instructed without jeopardizing peace, sovereignty or treaty obligations.

Part V Great Lakes Issues

"Seven generations, we really mean that. It often comes up against other current priorities, such as economic development. We have many issues to address, esp. development of the Seaway, cultural issues such as making baskets from cane grown in polluted waters and taken through the mouth, may not fall easily into the Great Lakes Governors nine priorities. The governor's nine points were preordained without our input..." Oren Lyons, Haudenosaunee representative making a statement to Mike Leavitt,U.S. EPA Administrator at a Great Lakes meeting with indigenous Nations/tribal leaders.

The Great Lakes are the largest body of freshwater on earth and holds approximately one-fifth of the world's freshwater. Lake Superior is the second largest lake in the world, after Lake Baikai. The Great Lakes system flows from Lakes Superior and Michigan, through Lakes Huron, Erie and Ontario and the St. Lawrence River into the Atlantic Ocean. The Lakes are connected by short narrows at Mackinac and by the St. Clair, Detroit and Niagara Rivers. These rivers have a very high flow rates.

There are approximately twenty-nine Native American Tribes in the Great Lakes area and the Great Lakes Basin. Within the 750 miles of land adjoining the Great Lakes, there are eight states and two provinces claiming jurisdiction. The Great Lakes hold 18% of the freshwater of the world.

As Haudenosaunee (Six Nations Confederacy), we live along one of the Great Lakes and/or within the Great Lakes Basin: from the St. Lawrence River to Lake Ontario.

5.1 THE GREAT LAKES CHARTER 1985

The charter states that only the State and Provinces have jurisdiction over the National resources of the Great Lakes. It avoids language about Native Nations who have signed treaties with the United States and Canada (Great Britain). The indigenous Nations, whether referred to as Tribes, First Nations, Native Nations, Native American, Indian or Haudenosaunee, have a shared jurisdiction over the waters.

The Charter's use of terms in the mission statement is commendable, such as "to conserve, preserve and protect the National resources of the Great Lakes Basin for the future generations". The terms are consistent with principles within Haudenosaunee philosophy. However, it stops short by only addressing new water diversions and does not address diversions which are currently existing.

5.2 SUPPLEMENTARY AGREEMENT TO THE GREAT LAKES CHARTER (June 18, 2001) a.k.a. Great Lakes Annex

Haudenosaunee Response

The philosophy of the Haudenosaunee is three-fold. We must look into the past to carry out the instructions given to us by the Creator. Secondly, we give thanks for the elements of Creation that include the plant life, the medicines, the fish, the waters and the air. Finally, under the law given to us by the Peacemaker, we use three principles: Peace, Power and Righteousness to implement the

protection of creation's elements.

These are the principles of our forefathers. We exercise this and carry those thoughts into the present. The principles serve to remind us of the agreements we have made with other Nations and the agreements continue to be in force as international treaties. Those treaties are between two Nations: the Haudenosaunee and the United States and their successors, the Haudenosaunee and Great Britain and their successors. When those agreements were made, we used acceptable terms such as 'brothers, coexisting in the river of life on parallel paths.' Contained within the acceptable terms of the agreements are mutual peace, friendship and respect to live side by side.

The Haudenosaunee continue into the future, as instructed by the Creator, to protect those unborn faces yet to come and into the next seven generations.

> "Seven generations, we really mean that. It often comes up against other current priorities, such as economic development...Cultural issues such as making baskets from cane grown in polluted waters taken though the mouth, may not fall easily into the Great Lakes Governors 9 priorities": Comments from Onondaga Faithkeeper Oren Lyons to Michael Leavitt concerning the Great Lakes.

As Haudenosaunee, we are citizens of our own Nations. We have never agreed to be citizens of the United States or Canada. Our land is not held in trust by the United States government or any State. We retain jurisdiction over our aboriginal territory, people, waters and the air as given to us by the Creator.

The purpose of the Great Lakes Annex is to amend the Great Lakes Charter of 1985 to regulate and plan a decision-making process (G.L. Basin-wide) to withdraw or divert water from the Great Lakes.
The Annex to the Charter has resulted in a 'Proposal' consisting of two documents:

1. The Great Lakes Sustainable Water Resources Agreement ("the Agreement"), among the 10 Great Lakes States and Provinces, and,
2. The Great Lakes Basin Water Resources Compact ("the Compact"), an agreement among the 8 Great Lakes States to join together in an interstate compact to enhance joint decision making about the use of the Great Lakes water.

- ***An Agreement between Great Lakes government to regulate water withdrawals is a necessary reality and we thank those people who have begun to propose regulations.***

  World water shortages loom and efforts to sell the waters of our Mother Earth will be more common in the near future. We thank the United States Governors and

Canadian Premiers for turning their attention towards this reality and we hope the regulations will be designed to protect those unborn faces yet to come.

The International Joint Commission (IJC) follows sound principles in their decision-making process. H.E.T.F.'s scientific co-chair sits on IJC scientific committee and the committee continues to produce excellent work.

- ***The current agreement ignores the existing amounts of diversion and consumptive use of waters where the Haudenosaunee have a direct interest for customary uses, traditional practices and ceremonial purposes.***

  Haudenosaunee traditional teachings about the sacredness of water remain strong. We, as the keepers of traditional knowledge, along with original instructions from our Creator, continue to give thanks to the waters, everyday. We greet, thank and support the sacred waters for the duties and responsibilities they bestow onto the natural world.

  As we explain about water's sacredness and our efforts to protect their natural flow, we must emphasize that Haudenosaunee Nations have never sanctioned the treaties and protocols in regard to the usage of Lake Ontario, Lake Erie, St. Lawrence River watersheds, and the greater Great Lakes Basin, beginning with the Boundary Waters Treaty of 1909 and ending with the Great Lakes Charter of 1985, of which the Great Lakes Annex of 2001 plans to amend.

  Within the treaties and protocols as mentioned in the previous paragraph, the terms of diversion and consumptive uses are too broad. They remain as ambiguous definitions that promote abuse beyond the existing constraints and may result in future lawsuits. As well, the mentioned water usages create alternate paths for springs, lakes, rivers and streams to follow, sometimes being removed completely from the Great Lakes Basin. Our waters are already used to make profit for Private, State, Provincial, Federal and Crown interests, with large amounts of hydroelectric diversions from Lake Ontario, Lake Erie and the St. Lawrence River. It is a responsibility as human beings to protect the waters of this region. We object to any diversion, consumption and abuse without full understand of the natural flow of water and the sacredness of their element in regard to creation.

- ***Haudenosaunee Nations should have been involved in drafting the Annex Proposal.***

  Some Nations were invited to the signing of the Annex, but no other consultation or participation was forthcoming. The governors and premiers face an uphill battle with the Haudenosaunee by presenting a proposal created behind closed doors with no prior consultation with Indigenous/First Nations governments. If true consultation is an objective, we should have been engaged in devising the proposal before the Annex or other documents were drafted, not in the 24th hour. The plan then could have been presented to the public and would receive much larger acceptance.

  In the Treaties between the United States and the Haudenosaunee and between the Haudenosaunee and Great Britain, the Haudenosaunee is a sovereign entity. These treaties preempt the Boundary Waters Treaty. The Federal government has

a fiduciary responsibility to consult with the Haudenosaunee, on a Confederacy level. The Haudenosaunee Confederacy are not to be treated as under State or Provincial jurisdiction that surrounds our Territory, but on a Nation to Nation level, a government-to-government basis.

- ***Indigenous Nations/Tribes throughout the Great Lakes Basin were not included in the process.***

  There is no mention of Indigenous Nations or their populations, who have a special relationship to the waters and land of the Great Lakes area. Indigenous Nations are established on rivers, streams and lakes flowing into the Great Lakes Basin. We have only to look at the name places to know this is our traditional territory.

- ***The Annex only refers to new uses for withdrawal.***

  Existing usages are exempt. The Haudenosaunee have always used the Great Lakes Basin area for cultural and social purposes. The Annex fails to mention indigenous practices, loss of shoreline, destruction of fish spawning beds, polluted waters, diet change and the resulting epidemic increase of diabetes among indigenous populations. The Great Lakes Basin area is where Haudenosaunee and other indigenous people still retain the right to hunt, fish and gather in the customary manner accorded to our people and according to international treaty law.

  The Winters Doctrine is the first international agreement on sharing water from the Milk River between the US and the Fort Belknap reservation. Haudenosaunee Nations, like most Indian Nations within the U.S., still have a strong case for protecting Indian interests in water quality and quantity impacts from off-territorial upstream interests, American or Canadian.

- ***The Haudenosaunee should participate as an equal partner on the three groups appointed to develop the Annex Proposal, including the Water Management Working Group, the Advisory Committee and the Resource Group and Observers.***

  To our knowledge, there has been no participation by the Haudenosaunee in any of these three groups prior to the issuance of the Request for Public Comment. These groups have been working on crafting a proposal and guiding the public review process of the proposal for over two years and no consultation with the Haudenosaunee has occurred.

- ***The information present in the "Request for Public Comment" is false because it does not apply in New York State, where the purported 'jurisdiction' has yet to engage in any consultation during the proposal development.***

  The July 19th Request for Public Comment states: "Finally, the individual jurisdictions have been engaging in ongoing consultation with their relevant

Tribes and First Nations while this proposal has been developed." This is false information.

Although New York State surrounds Haudenosaunee Territory, we do not fall under New York State jurisdiction. Aside the fact that New York State and Wisconsin do not have the jurisdiction to dictate what happens in Haudenosaunee Territory, there has been no ongoing consultation. The same is true with Ontario and Quebec. Prior to a letter being generated from Gregory J. Allen, Senior Assistant Counsel to the Governor (Pataki) on July 20, 2004, there was no indication that New York State had any interest in consultation with the Haudenosaunee. A meeting was slated for September 21 at the Onondaga Nation Longhouse. The Haudenosaunee maintain that the engagement amounted to a briefing meeting and not a consultation session.

- ***Jurisdiction is an inappropriate term and inconsistent within the Compact and the Agreement.***

  "Jurisdiction's Waters" is contained in the Definition of Terms of Agreement yet not addressed and clarified in the Compact. The use of the term is also inconsistent with Indian Law and Treaty Law whereby state, provincial, federal or crown governments have no jurisdiction over the Haudenosaunee.

  Regarding water diversions and Indian Nations in Michigan and with respect to Haudenosaunee interests there are jurisprudence implications on the Annex. The Judge seems to justify water withdrawal via the Annex 2001 before the current proposal became enforceable.

- ***It is in the best interest of the Great Lakes States and Provinces to include the Haudenosaunee in the discussions.***

  The Haudenosaunee reside in their sovereign territory within the Great Lakes Basin. In looking ahead, some entrepreneurs may pose a risk for New York State and Ontario/Quebec because neither the Charter, nor the Annex to the Charter applies to Indian territories. Should businessmen decide to sell surface water or groundwater from the Great Lakes but within an Indian reservation, disputes may evolve without full participation of the Haudenosaunee in these agreements.

CONCLUSION: ***Politically, Haudenosaunee Nations are sovereign entities that may not be party to a Charter amongst States and Provinces, much less an Annex to a Charter.***

As indigenous people, the Haudenosaunee, are deeply concerned about the Great Lakes. As in the Great Lakes Governor's Council, we too are troubled by water/land/air pollution that affects this vast resource of our people. We are

concerned about invasive species, ships emptying ballasts into the St. Lawrence /Great Lakes system, early icebreaking, expansion of the Seaway.

As well, as Haudenosaunee people, our traditions are the core of our society. The Haudenosaunee have never given up our rights to hunt, fish, and gather on our traditional Territories. Those rights need to be respected as guaranteed by Treaties signed between our ancestors and the fledgling United States. It is ridiculous to think that the Haudenosaunee don't sit at the table with full authority over our own lands. The Haudenosaunee have presided over this territory from time immemorial and continue to take care of the resources the Creator has given to the Onkwehonweh (original people). We have competent people working on various environmental issues. Some are involved in the International Joint Commission and participate on various boards and committees for the sustainability of

Mother Earth.

As part of the treaty agreements, the Haudenosaunee reserved the right to access and have free use of traditional waterways (and highways). The traditional waterways and highways need to be accessible and free to all Haudensaunee people: currently, this is a matter that needs to be addressed.

The Haudenosaunee Environmental Task Force is asking for a review process on the Boundary Waters Treaty. At the very least, the Haudenosaunee should be assigned as a subject to a future annex of the Boundary Waters Treaty. The Haudenosaunee and other indigenous peoples don't fit under State/Provincial recommendations.

We know the issues and we have competent people to work on an Annex. We wish to work cooperatively on the issues that concern all of Creation and our unborn children seven generations into the future.

We await your response. Da nah tho
Prepared by the Haudenosaunee Environmental Task Force

5.3 2003 GREAT LAKES STRATEGY

The Great Lakes Strategy is supported by two concurrent bills: S1398 The Great Lakes Restoration Act and HR270 The Great Lakes Financing Act of 2003 (July 14, 2003)

The 2003 Great Lakes Strategy is designed to protect the resources of the Great Lakes Basin. With the backing of the U.S. Policy Committee, Thomas Skinner, Chair, 126 action items "articulates coordinated efforts of governmental partners

(Federal, States, Tribes) in protecting and restoring Great Lakes." The core of the document focuses on the human population to "eat the fish, drink the water, swim at beaches, and [have] a healthy environment."

COMMENTS FROM H.E.T.F. ON THE 2003 GREAT LAKES STRATEGY

- The focus of the 2003 Great Lakes Strategy targets pollution, beaches (human health) and fish advisories. These Initiatives take into account many actions which are progressing relatively quickly. However, in the areas that affect Haudenosaunee Territory, the listed state (New York) is lacking on project completion and/or lacks a monitoring system. Most of the initiatives within the Great Lakes Strategy will be completed by the deadlines, which does not consider all eight states. The initiatives are gauged by the number of on-going projects and not by participating states. In other words, some states may be doing the bulk of the projects whereas other states are stagnant and may be doing close to nothing. There is a discrepancy in the accountability of all states.

- The Strategy makes a statement about jurisdiction to the states and provinces. It did not considered treaty rights and Federal policy which the states/provinces must adhere to.

- The Haudenosaunee, as protectors and caretakers of the environment, would like to

- partner with the states and provinces in regard to a Great Lakes Strategy..

- The Great Lakes Strategy includes Tribes in the 300 page document, but did not consult with any tribes along the Great Lakes Basin. This lack of consultation/communication should be rectified and address indigenous Nations/Tribes/First Nations concerns.

- Strategy No. 37 is to improve understanding of exposure to health risks associated with consumption of fish and wildlife...and to follow fish advisories. We have seen from the past, and more specific within the community of Akwesasne, fish advisories were effective. However, in retrospect, the fish advisories eliminated the community's protein source which in turn added to epidemic diabetes disease at Akwesasne. If fish advisories are implemented and followed, health practitioners/educators need to aggressively teach about healthy eating alternatives rather than leaving a community to make uninformed decisions to eating foods high in carbohydrates and sugars.

- The Great Lakes Strategy makes an overall statement to initiatives but provides no tracking system and there is no substance for progression to a cleaner, healthier environment.

- Strategy No. 126 promotes Public Involvement in Great Lakes Program. The Haudenosaunee would like to be kept abreast of the any information in regards to the Great Lakes.

5.4 SEAWAY ICEBREAKING ACTIVITIES

AKWESASNE MOHAWKS: The Socio-Cultural Impacts of Icebreaking Activities Associated with Seaway Shipping (Summary of the Briefing Paper for the Mohawk Nation Council of Chiefs, by Barbara Gray)

The integrity of the ice cover is of great importance to the entire natural world and has socio-cultural significance to the Mohawk people at Akwesasne. Icebreaking will disrupt the natural cycle of the river and will negatively impact the people and the natural order at Akwesasne. The people of Akwesasne are concerned that proper studies have not been undertaken to adequately determine the negative impacts of ice breaking activities in the St. Lawrence Seaway to the Natural World. Some studies exists that can be applied to ice breaking concerning fish and fisheries disruption, but more research needs to be conducted. In addition, an indigenous perspective is the holistically approach to include each of the beings within the environment, including the cultural needs of the Akwesasne people. The needs must be studied and protections put in place to protect them all.

The Mohawk people and migrating animals have continually used the frozen St. Lawrence River as an ice bridge. Forced destruction of the ice cover may weaken the ice in other parts of the St. Lawrence River, as well as impacting the ice on connecting rivers. ie: Under the ice, wakes may drown aquatic animals by flooding ice caverns (pockets) that these animals use for breathing and for traveling beneath the ice cover. It may also make the ice unsafe for humans as the frozen river is used as a roadway, ice-fishing activities and recreation use.

Thus, ice breaking will jeopardize the socio-cultural uses of the ice cover at Akwesasne.

The shoreline and shoreline vegetation, habitat and structures built along the shore will be
highly impacted. In addition, the scouring of the riverbank and bed will churn up sediment; thus, exposing the environment and people to toxic chemicals. At risk are the breeding areas of animals and fish as well as impacts to sensitive medicinal plants that grow along and adjacent to the river that the Akweasronen [people of Akwesasne] depend on to keep the community healthy.

The Haudenosaunee environmental perspective requires thinking of the future generations. The waters have a natural cycle, with ice serving many functions that humans and the rest of the Natural World are interdependent on for their well

being and balance. Ice cover should be allowed to break up naturally. Nature should dictate the opening and closing of the Seaway shipping season, not humans. Icebreaking should not be used because the harms to the environment and to the community of Akwesasne far outweigh the economic benefits. An environmental injustice occurs when the people of Akwesasne and the natural world carry the burden of environmental and cultural impacts, for the economic benefits of others.

5.5 SEAWAY NAVIGATIONAL STUDY

Great Lakes St. Lawrence Seaway Study (Navigational Study) Public Hearing October 28, 2004, Akwesasne Mohawk Territory (Excerpt of Speaking Notes for Joyce King, Acting Director of HETF)

> H.E.T.F. has a mandate from the Haudenosaunee Confederacy through a formal resolution by the Grand Council and is included in the United Nations document entitled: Haudenosaunee Environmental Restoration: An Indigenous Strategy to Human Sustainability" (1992).
>
> From the Haudenosaunee comes a Traditional Knowledge System. TKA is a holistic approach to the ever-encompassing Natural World. Our Traditional Knowledge System is so imbedded that our philosophy and cultural lifeways are perpetuated in our actions despite the lack of understanding and sensitivity by governments that surround our communities.
>
> Our culture is creation-based. The Haudenosaunee have been given instructions from the Creator to give thanks by reciting the Ohenton Kariwatehkwen (Words That Come Before All Else). What does it mean? Give Thanks? The answer: Every part of Creation was made for sustaining humankind. Once we thank, acknowledge and understand this basic principal, mankind, you and I, will have the tendency not to overuse or waste resource. As a human, when you give thanks to every part of Creation, you begin to realize the intricate connection with this web of Creation. So intricate, you become a voice, an advocate for the parts of creation that cannot defend itself from the abuse of mankind.
>
> By using the framework within that Thanksgiving Address, here are a few impacts of the Seaway. *The People*: impacts have been made to hunting, fishing, cultural use of the river and other impacts as addressed in this public hearing today. *Mother Earth*: Destruction of
> the shoreline and upheaval of riverbed sediment. *The Grasses*: impacts to their survival and human survival as the grasses are an important filtration system in wetland management; food and home to many creatures in the water. Grasses also need protection from shoreline
> erosion. *The Medicinal Plants*: A vital component of Haudenosaunee well being and health which have been destroyed in places, by shoreline erosion. *The Fish*:

The drastic decline of eel populations – a medicine and a food to Haudenosaunee and other creators of creation. There was also disruption to the sturgeon when dredged materials were emptied into their spawning beds. Today, sturgeon are approximately three feet long. Approximately one foot for every ten years growth and the sturgeon are still recovering from the last grand plan of the Seaway. Where have they gone? They have been displaced from the St. Lawrence River to the St. Regis River. Expansion of the Seaway will harm the sturgeon finding their place in the St. Lawrence River again. *The Waters*: Ship spills are not acceptable. There is no guarantee inspections in Montreal will avoid a disaster in the St. Lawrence. Controlled water levels are unnatural and a detriment to aquatic life. The Great Lakes/St. Lawrence River is the largest drinking water system in North America their security is also mankind's survival. *The Birds:* We protect islands that are nesting sites. Birds tend to naturally habitat in an area that is safe, undisturbed. We see endangered species nesting in our territory. The birds didn't need a Federal Protection Law to realize that Akwesasne is a safe haven for them. We welcome them to refuge in our Territory and we would like to keep them safe. *The Trees*: Also a medicine, a source of food and a resource to us. It is a habitat for so many creatures. Shoreline erosion will harm trees in their path.

Since time immemorial, the Mohawk people have occupied this area as hunting/fishing/gathering stronghold. In 1755, it became a permanent settlement. As you see, we have the knowledge of this area. Certainly we knew this area long before the winds carried Jacques Cartier to Hochelaga (Montreal) in 1634. We have a lot to offer. We know this place. This is our Territory.

In 1957, the Seaway began construction. Mohawk lands were expropriated for a New York Power Authority dam and the Seaway. Haudenosaunee lands and burial sites were inundated. Other lands became unusable, fish habitat and navigational/migratory patterns destroyed.

So what were the benefits of the Seaway?

1. Easy transportation to and from Cornwall
2. Employment of local Akwesasronen

What are the negative effects of the Seaway to the Mohawks?

1. Port of Entry by U.S. and Canadian officials on our Territory. We have to go through two ports of entry to access our land.
2. Environmental destruction of fish and wildlife and their habitat
3. Change of waterways (routes) used by our people
4. Severing of access to traditional waterways by the lock system and interconnecting dams

5. Invasive species
6. Unregulated water withdrawals
7. Water level fluctuations

Weigh the benefits and negative effects of the Seaway and we come up with a negative balance sheet not only for the Mohawks but also for the waters and the creatures sustained by the St. Lawrence River and the Great Lakes Basin.

In addition to current affects of the Seaway, we have only to look at water rights that should have been afforded to indigenous/Native Nations. The Winter's Doctrine has been upheld in the U.S. Supreme Court giving Tribes water rights and resources from water. It is an area that has yet to be explored within the Mohawk communities along the St. Lawrence River and the Great Lakes Basin.

Setting the Winter's Doctrine aside, you are dealing with the Haudenosaunee Confederacy. These are not lands of your ancestors. We have jurisdiction over this area, as a Nation. When the province of Quebec talked about separation, a Grand Council letter was sent to the Prime Minister of Canada. This letter informed Canada that if Quebec wants to separate, they can't take the land with them. It was never theirs to take: never Quebec's to begin with. The land belongs to the Haudenosaunee and the other indigenous people of that area. The land was never given up. If you look at the lands of the Tonawanda Senecas, the Onondagas, and the Mohawks, those lands were never placed in Federal Trust. It's still part of the Haudenosaunee Territory. (The U.S. Administration for Native Americans uses the term 'tribal trust'.)

The Haudenosaunee are also concerned about Homeland Security. Haudenosaunee people are not terrorists. Our concern is the protection of our land, our environment – something the Seaway has not done in the past. Akwesasne also have Homeland Security issues. We have ships going through our territory and no idea what shipments are going through our waters. The ship manifests are not public information. We have a right to know if shipments may be a threat to our people.

The St. Lawrence Seaway is protected by Treaties: The Boundary Waters Treaty of 1908 is one such treaty. However, there is a Treaty currently being disregarded: The Jay treaty – the Treaty of Amityville and Commerce which gives Haudenosaunee Nations free access and free from tolls along waterways and highways in our traditional territory. This has never been abrogated by Congress, although some officials are under the false impression that is has been and would like to tell you otherwise. But it is not so.

So why didn't we come forward during the early years of the Seaway. We did. The problem was a language barrier. To speak through a translator limits and misconstrues the issues you are trying to address. It didn't work in the 1957. But we know the English language, we have scientists, engineers, environmentalists, we have command of your language. It is clear the issues we are addressing and we would like to address them now.

How can we work together?
Consultation after final draft is completed, as with the Great Lakes Annex of 2001 does not promote dialogue. Meeting with indigenous Nations after the ink has dried is not called consultation.

We *can* live side by side in this river of life. Your forefathers agreed to this, so did our
forefathers. The United States and the British Empire entered into this protocol called the Two Row Wampum. And in the spirit of the two row, we can meet together and Polish this Silver Covenant Chain of Friendship so we may continue to live responsibly and to give thanks to the Natural World.

We can co-exist in this River of Life. We offer this solution: have a tri-national Study Partnership.

Da nah tho

5.6 GREAT LAKES ST. LAWRENCE RIVER SEAWAY EXPANSION

Letter dated December 21, 2002 from Tadadaho, Chief Sidney I. Hill to Hanadagayus, George W. Bush, President of the United States. [Letter attached]

RESPONSE BY FRANK ETTAWAGESHIK TO AN ADDITIONAL QUESTION FROM SENATOR INHOFE

Question. The Strategy establishes funding levels for each of its goals. However, there seems to be some disagreement as to who will be providing those funds. In your view, how much of the $20 billion in the Great Lakes Strategy do you expect from the Federal Government, the State governments and the local governments?

Response. Tribal Nations are not in a position to determine particular funding responsibilities among the Federal, State and local governments in terms of contributions toward implementing the Great Lakes Regional Collaboration Strategy.

As Strategy implementation funding options are considered, the Federal Government has the responsibility to fund Tribal environmental and natural resource programs above and beyond any other commitments made in the name of Great Lakes protection and restoration. Congress must keep in mind the unique treaty commitments, statutory obligations and trust responsibility that the Federal Government has toward Tribal Nations. As called for in the Strategy, the continuing capabilities of Tribal natural resource and environmental management programs must be maintained.

Tribal Nations will continue to provide care and stewardship for the Great Lakes as called for by our customs, traditions and teachings. We will do this each and every day, some with more governmental infrastructure than others, yet all with the resources and the programs we already have. We will work with any and all from our surrounding communities toward achieving the Strategy's goals.

However, at the same time, Tribal Nations fully expect the Federal Government to live up to treaty obligations and trust responsibility for the additional financial help that is needed to fulfill the Strategy's vision and to undertake the actions that the Strategy requires. Moreover, we fully expect those who have created the ecological problems that we now face to accept responsibility and to commit the financial resources necessary to solve those problems without sacrificing this Nation's treaty and trust responsibility commitments to Tribes.

RESPONSES BY FRANK ETTAWAGESHIK TO ADDITIONAL QUESTIONS FROM SENATOR JEFFORDS

Question 1. Mr. Ettawageshik, do you have any comments on the effectiveness of EPA programs for assistance to the States and Tribes for water quality issues?

Response. EPA programs and associated funding for Tribal Nations are essential for water quality protection both within Tribal reservations and outside the reservations. Tribal Nations have been particularly successful in combining traditional ecological knowledge and western science to provide leadership in water quality management in a number of areas such as non-point source pollution. This success is in large part directly attributable to the Tribally dedicated funding provided under EPA-administered statutes, the Indian Self Determination Act, the Snyder Act and miscellaneous authorizations. The budgetary situation for many Tribal Nations is such that any cut in funding, regardless of how small, will have significant impacts and will often result in a de facto elimination of a program.

This type of Federal program assistance provided to Tribal Nations has been successful for another very important reason—Tribal governments are the most effective and appropriate mechanism for the delivery of the programs and services involved to the affected communities. Tribal governments are the best suited to know the needs of our communities consistent with underlying culture, teachings and traditions. We are thus best suited to operate these programs in an economically efficient and culturally appropriate manner that achieves results in the communities they are intended to benefit.

Question 2. Mr. Ettawageshik, I found your testimony regarding consideration of the impact of our own decisions on our seventh-generation descendants to be compelling. Can you provide your view of how we're doing in that regard with the major environmental issues of our time including climate change, water quality, and air quality and wildlife protections?

Response. When we can walk down to the lake and drink its water and eat its fish without fear for our health, and see our traditional plants and game around us in well being and plenty, we will know success. We have made progress toward these ends, but we are not there yet.

When the Great Lakes Regional Collaboration Strategy was released at the Summit II event in Chicago on December 12, 2005, I delivered the following remarks:

- All of this plan and the hundreds of pages of appendices can be summed up as follows: If it is harmful, don't do it; if we are already doing it, then stop; if harm is coming from what we already have done, then we must undo it.

To determine our effectiveness in dealing with Great Lakes restoration and the other major environmental issues of our time we must measure our actions against that philosophy. To the extent that we follow it, we are making progress. To the extent that we do not follow it, we are failing.

Today's budget difficulties and political realities cannot be ignored, yet they cannot be used as an excuse to ignore actions that can be taken within existing fiscal capabilities or to stop those practices that we know are harmful. We must openly acknowledge and attempt to address each of the problems we face, including those resulting from climate change, if we are to be successful in passing on a cleaner, healthier Great Lakes ecosystem to our descendents.

RESPONSES BY FRANK ETTAWAGESHIK TO ADDITIONAL QUESTIONS FROM SENATOR VOINOVICH

Question 1. How can we better coordinate this massive restoration effort?

Response. We should build upon the unprecedented success of the Great Lakes community pulling together to acknowledge a shared vision and to create an action-oriented blueprint for achieving it. We must be careful not to impose an overly centralized structure or too much regimentation on the process of implementing the Strategy. There is no "silver bullet" solution to how best to "quarterback" this effort. The parties involved in the restoration effort and the needs of the Great Lakes are many and diverse, and their interrelationships are complex and dynamic. The mutual trust and respect that has so far been engendered in the GLRC process should be relied upon to drive the creativity and maintain the commitments that are necessary to ensure that the sum total of all the efforts of all those involved—governmental, non-governmental, private sector and everyday citizens—will be greater than their separate but individually necessary efforts.

The Strategy provides us with a blueprint to restore and protect the Great Lakes. The GLRC Executive Committee has drafted an Implementation Framework that adopts an approach for implementation, monitoring and tracking of the Strategy's priorities. The partners necessary for an effective effort to restore and protect the Great Lakes are at the table and willing to do their part. The Collaboration partners are starting to take joint actions to implement the Strategy and start the restoration process. This process must be given a chance to work.

Question 2. How can we better coordinate Great Lakes programs at all levels of government so that we are more efficient and effective?

Response. Many of the things that are already being done by the Collaboration partners in the name of the Strategy are working well and do not need to be changed. The partners do need to strive for efficiency and effectiveness in implementation of the Strategy. EPA has served as an effective leader throughout the collaborative process and can continue to do so as the Strategy is implemented. By taking the lead on restoration and protection of the Great Lakes, both by supporting existing programs that are working well and embracing new programs where there is a need, Congress and the Administration will be doing their part and demonstrating a commitment to the Great Lakes that will carry over to the rest of the Collaboration partners.

To fully address the goals of protecting and restoring the Great Lakes and to ensure that important needs of the region are not left behind, the priorities set forth in the Strategy should serve as a substantive and fiscal policy decisionmaking guide for the region, but not an exclusive set of actions. As the Strategy is implemented by the partners and the greater stakeholder community, it will be important to follow the Strategy priorities while allowing room for parties to engage in programs utilizing resources and funding that may not have been specifically identified in the Strategy. A program beneficial to the Great Lakes should not be turned away or cast aside simply because it does not fit into a neat box created within the Strategy.

I believe that there is a concern shared among the Tribal Nations over any significant revamping of Federal funding streams that would rely upon exclusive competitive project-oriented funding. Tribal governments rely on a variety of funding sources for both program and project funding simply because we would be unable to carry out the projects without the requisite expertise of on-going professional staff. As recognized by the Indian Self Determination Act, because we are based in the communities we serve, Tribal governments are really in the best position to deliver programs to our members. The current funding delivery system puts funds in

the hands of Tribal governments to do this. Moreover, Tribal governments are the only ones providing many of the programs that benefit our members and if we do not provide those programs, no one will.

Question 3. What is the key to keeping together all of the groups involved in the creation of the blueprint strategy in order to implement the goals established by the Collaboration?

Response. There are three keys to keeping all of the groups involved in the creation of the Strategy together for implementation of the Strategy. These keys are: (i) an open and transparent process involving public participation, (ii) action on the Strategy priorities and (iii) inclusively of groups and programs rather than exclusivity.

As recognized by the GLRC Implementation Framework developed by the Executive Committee, the implementation process must be an open and transparent process. There must be opportunities for public input and participation. In constructing the GLRC and developing the Strategy, the public was always welcome and the process was always open. This model worked well, encouraged participation and should continue.

Implementation needs to move forward, seizing on the amazing momentum and confluence of energy among all Collaboration partners. The Collaboration partners and the greater Great Lakes stakeholder community present a diverse and varied group based on the common concern for the protection and restoration of the Great Lakes. To keep that group together, that common concern for the Great Lakes must remain the focus of implementation. Any delay in action to implement the Strategy will result in the loss of momentum and the will of various groups to remain involved. The time to act is now.

Finally, because of the diversity of the Collaboration partners and other groups involved in the effort to protect and restore the Great Lakes, it is crucial to avoid marginalization of particular groups because programs they support do not make it on an "action list" created in the name of Strategy. There are numerous beneficial programs at work in the Great Lakes basin. As the Strategy moves toward implementation there is increasing desire on the part of some, both inside and outside the basin, for efficiency and streamlining of programs and funding delivery systems. While Tribal Nations recognize the need for efficiency in this process, streamlining programs and funding delivery systems results in a growing risk of abandoning or undercutting currently successful programs. It also creates a risk of proceeding on a "least common denominator" basis or on a pared down list of actions developed for immediate political expediency. We are concerned that even further shortening of the list of priorities contained in the Strategy, simply for the sake of improved program efficiencies or cost savings, will short-change what needs to be done and leave some groups interested in the effort on the outside looking in.

Responses by Frank Ettawageshik to Additional Questions from Senator Obama

Question 1. How would your respective organizations want the Task Force to incorporate Governors and tribal leaders in future decisionmaking? Do you believe that non-Federal stakeholders need to be given a more formal role?

Response. As part of the unique relationship between the United States and Tribal Nations, the Federal Government has treaty and trust obligations that require the Federal Government to consult on a government-to-government basis with Tribal Nations prior to making decisions affecting Tribal lands, resources, people or treaty reserved rights. Tribal Nations expect the Task Force and all Federal agencies to live up to these obligations throughout the Strategy implementation process. Specifically there is a continued vital role for the EPA American Indian Environmental Office in maintaining the tribal caucus as an instrument for effective Tribal communications.

Assuming the Federal Government fulfills it obligation to engage with Tribal Nations on a government-to-government basis, we do not see a more formal role for Tribal Nations on the Task Force. Each partner in the GLRC has a role, including Tribal Nations and the Task Force. This consensus based process has worked well. The Implementation Framework drafted by the GLRC Executive Committee provides for the continuation of this process and should be the model for the continuation of the Collaboration. However, Tribal Nations would certainly encourage anything to make the Task Force more open in its activities and more accountable to the other Collaboration partners and greater stakeholder community.

Question 2. What are your organizations' plans to coordinate future restoration efforts across the region?

Response. Tribal Nations have recognized responsibilities to our communities to protect the environment and natural resources in the past, now, and into the future. We can and do fulfill some of these responsibilities within limitations of budget and personnel by coordinating with others to restore and protect the Great Lakes, including among the Tribal Nations themselves, with the First Nations in Canada, and with other governments and groups.

Tribal Nations and our agencies will continue doing the things that we have been doing and that have been working well as it relates to the protection and restoration of the Great Lakes as funds allow. To this end, over 140 Tribal and First Nations of the Great Lakes basin previously signed the "Tribal and First Nations Great Lakes Water Accord" that pledges us to work together with each other and with other governments to secure a healthy future for the Great Lakes. The GLRC Tribal Caucus will continue to function for the purposes of the implementation framework if funding is maintained. In addition, Tribal Nations that share treaty ceded territories utilize intertribal agencies such as Great Lakes Indian Fish and Wildlife Commission (GLIFWC), Chippewa Ottawa Resource Authority (CORA) and the 1854 Authority. Tribal Nations are and will continue to be active partners and participants in the wide array of existing initiatives that effectively coordinate, including the Binational Program to Protect and Restore Lake Superior, the GLRC and the Great Lakes Strategic Fisheries Management Plan.

In these cooperative efforts, Tribal governments will continue to speak on behalf of Mother Earth, the water, the plants and the animals. We will continue to speak on behalf of our communities to preserve life ways based upon culture, traditions and teachings. We will continue to be active members of the larger Great Lakes community, partnering with other governments, with the private sector, with non-governmental entities and with everyday citizens to achieve a cleaner, healthier Great Lakes ecosystem.

STATEMENT OF RICHARD M. DALEY, MAYOR, CITY OF CHICAGO, ON BEHALF OF THE GREAT LAKES AND ST. LAWRENCE CITIES INITIATIVE

Good morning Chairman Inhofe, Chairman Voinovich, Ranking Member Jeffords, and members of the committee. Thank you for the opportunity to appear before you today.

My name is Richard M. Daley, and I am here today in my capacity as Mayor of Chicago, the largest city on the Great Lakes, and as Chairman of the Great Lakes and St. Lawrence Cities Initiative, a coalition of 85 United States and Canadian mayors who represent cities and towns located along Great Lakes shorelines. A list of the Initiative's members is attached. Also attached is a letter from Toronto Mayor David Miller, Vice Chairman of the Great Lakes and St. Lawrence Cities Initiative. On behalf of the Canadians mayors, Mayor Miller's letter supports my testimony today.

I created the Great Lakes and St. Lawrence Cities Initiative in 2002 to provide a forum for mayors to engage in a focused effort regarding the important work of protecting and restoring the Great Lakes. The Initiative provides a bi-national entity for mayors to share best practices on protecting the Great Lakes and for mayors to become more involved in future Great Lakes policies and decisionmaking. Mayors are on the front lines of the Great Lakes, and are usually the first persons that citizens turn to when issues or concerns arise regarding the Great Lakes. While the Great Lakes seem vast and permanent, Great Lakes mayors are well aware that they are vulnerable to mismanagement. The Great Lakes are critical for our cities and town, and mayors know first-hand that they need to be protected.

I am pleased to be here today for this important committee meeting, and I thank Chairman Inhofe and Chairman Voinovich for making this meeting possible. It is clear that the members of the EPW Committee recognize how important the Great Lakes are, not only to the Midwest, but also to the Nation and the world.

Over the last year, many people in this room have been involved in a very important collaborative effort relating to the future of the Great Lakes.

First, many of us were present in Chicago when the Administration announced the Executive order that created the Great Lakes Interagency Task Force and the Great Lakes Regional Collaboration.

Without leadership from the President, along with the active participation of many Great Lakes members of Congress, this Executive order would not have been signed and the important work of the Regional Collaboration would not have proceeded. I thank the Administration and Congress for taking that important step.

Second, many people in this room were also present several months after the Executive order was announced, when the Regional Collaboration had its official kick-off meeting, and many were present yet again this past December for the signing of the Regional Collaboration's consensus document, the "Great Lakes Strategy".

These major events offered promise and hope for the future of the Great Lakes. While they were heralded with great press attention and ceremony, there were other significant developments during the past year that received less attention.

At meetings in Rochester, New York; Toledo, Ohio; Traverse City, Michigan; and Duluth, Minnesota, hundreds of professionals joined together through the Collaboration to determine the best ways to protect and restore the Great Lakes.

Approximately 1,500 people from dozens of cities and eight States rolled up their sleeves to participate in this process. They represented all levels of government, tribal nations, the private sector and the non-profit community, and they worked together in a non-partisan fashion.

As you can imagine, this was not a simple process. But the benefits of the Regional Collaboration cannot be overstated.

We now have a consensus strategy for Great Lakes actions and investments for years to come. Members of Congress can feel confident that this strategy represents the will of the Great Lakes community. For the first time, we are all on the same page with a common vision.

Thanks to these efforts, I am proud to report to you today that, as you requested, the priorities have been identified and the planning for Great Lakes protection has been completed. Today we are here today to discuss the next steps for implementing a long-term strategy for protecting and restoring the Great Lakes.

The Collaboration Strategy recognizes that repairing the damage to the Great Lakes cannot be done overnight. It is a long-term undertaking that will require large-scale investment from all levels of government and all stakeholders.

The Congress can be assured that we in local government will do our part. As Chair of the Great Lakes and St. Lawrence Cities Initiative, I'm proud of the investment, innovation and leadership that mayors in the United States and Canada are already bringing to Great Lakes issues. And more innovation is planned.

Great Lakes mayors have numerous responsibilities as a consequence of our shoreline locations. Among those responsibilities, we must supply clean drinking water to our regions, ensure safe and clean beaches, develop our shorelines responsibly, ensure proper sewage treatment, guard against excess runoff, provide safe water recreation opportunities, and be cognizant of our responsibility to conserve this important resource for generations to come.

The cities represented by our board of directors each spend an annual average of well over $200 million for needs related to the Great Lakes, including drinking water and wastewater infrastructure, stormwater management, parks and open space, pollution prevention and shoreline protection.

In addition to financial investments, Great Lakes mayors are implementing innovative changes in water policy; stepping up efforts to conserve water; implementing sustainable building practices; protecting our shorelines from erosion; and passing ordinances to stop invasive species.

In Chicago, we are leading the way in innovative green building and green water infrastructure. We're ensuring that new city buildings are certified as green buildings, and encouraging private-sector developers and citizens to conserve water and use stormwater as a resource.

As Great Lakes Mayors, we are investing our own local resources in innovative approaches to protect the Great Lakes, and we are learning from each other about how to do even more.

In Chicago, we are building a stormwater tunnel that will collect clean rainwater from the roof of McCormick Place, the largest convention center in the nation, and return it to Lake Michigan instead of dumping it in the sewer system.

The tunnel is 12 feet in diameter, 3,300 feet long, and extends 150 feet under existing buildings and roadways. It will keep approximately 60 million gallons of water out of the sewer system every year. This will help conserve our Great Lakes water and reduce sewer overflows during large storms.

Racine, WI is doing some of the most innovative work in the country to come up with solutions for beach contamination.

Erie, PA and Rochester, NY have made great strides in managing wet weather flows to reduce sewer overflows.

Gary, IN is transforming 21 miles of contaminated industrial property along Lake Michigan into publicly accessible parkland.

And Cleveland recently approved a Lakefront Plan to reconnect the city with Lake Erie.

These are just a few examples of Mayors' leadership in the efforts to protect and restore the Great Lakes.

As I stated previously, long-term protection of the Great Lakes will require a sustained commitment at all levels, including the Federal Governments of the United States and Canada, State and local governments and tribal nations. It should be clear from today's hearing, that these groups have already demonstrated their willingness to make a commitment to move forward.

With respect to role of the Federal Government, on December 12, 2005, I joined Governor Jim Doyle of Wisconsin and Governor Bob Taft of Ohio in sending a letter to President Bush, outlining the first near-term actions toward making our Great Lakes vision a reality.

These actions were developed through the Regional Collaboration process and are supported by the Great Lakes community.

We asked the Administration to support $300 million in new funding for programs to address a range of high priority issues, including sewer and water infrastructure, toxic pollutants, wetlands restoration, river restoration and brownfields programs.

Given this Federal funding commitment, local and State governments would invest approximately $140 million in matching funds. This would be in addition to the billions of dollars that local governments collectively spend annually on things like water infrastructure, shoreline and habitat improvements, pollution prevention, and stormwater management.

Investing in these near-term actions is an important down payment toward our long-term commitment to implement the Great Lakes Regional Collaboration strategy, and will help address the most urgent priorities.

I would like to highlight several of these near-term actions that are essential for protection of the Great Lakes.

• The Army Corps of Engineers must be given authorization to build and operate two invasive-species barriers in the Chicago Sanitary and Ship Canal, along with a $6 million appropriation to carry out this work.

This is not a State of Illinois issue; it is a Federal issue. The amount of resources needed to complete this work is a fraction of the costs associated with devastation to the Great Lakes that Asian carp will cause if they move into Lake Michigan.

• In order to stop the next invasive species from entering the Great Lakes and other important waterways, we need comprehensive invasive species legislation. I know many in Congress have been working on such legislation and I appreciate your work.

• USEPA's brownfields program should be increased by $50 million and those funds should be targeted to shoreline communities around the country, so that waterfronts can be better protected.

• I also want to highlight the importance of fully funding the Clean Water State Revolving Loan program. Municipalities throughout the country are in dire need of funding to address aging water and wastewater infrastructure and this program is critical to that work.

• We also support the President's FY07 request for full funding of the Great Lakes Legacy Program to address toxic hot spots.

• Finally, we support the President's commitment to restore 200,000 acres of wetlands and ask that $28.5 million be appropriated for this cause.

These actions, as well as others outlined in our December 12 letter to President Bush are important first steps that we, as a region and as a nation, need to take in the short term.

While these projects are under way, we also need to examine two key elements of Great Lakes protection and restoration: excessive bureaucracy and funding delivery.

There are more than 140 separate Federal programs related to the Great Lakes. Too often these programs are not coordinated and lead to delays in implementation and inefficient use of resources.

The Asian carp barrier in Illinois is only one example. Despite being hailed as a victory for increased coordination among Federal agencies, the barrier has continued to run into bureaucratic road bumps. It is hard to believe that we are still trying to figure out how to secure funds and determine who will operate it once it is finally constructed.

In order to better address these coordination issues, I am joining with the Great Lakes Governors in calling for Congress to codify the Federal Interagency Task Force. This will help legitimize the Task Force and provide a mechanism for Congressional oversight.

Finally, we need to better target our scarce resources for Great Lakes restoration programs. We should to explore long-term strategies that give State and local gov-

ernments more control over directing these resources, using the Collaboration Strategy as a guide.

I am well aware that there are competing priorities and limited resources. However, investments we make now will prevent the need for far larger expenditures in the future. We shouldn't let the potential costs deter us from making the plans necessary to preserve the source of 95 percent of the Nation's fresh water and 20 percent of the earth's fresh water.

We have a lot of work ahead of us. We have already shown that the Great Lakes community is willing and able to work together to find solutions.

By continuing to work together we can turn this strategy into action.

This is a serious commitment, and one we must all make.

In closing, I would like to again thank Chairman Inhofe, Chairman Voinovich, Ranking Member Jeffords and the members of this committee for holding today's meeting to address the very important topic of the Great Lakes, and for providing me with the opportunity to share the views of Great Lakes mayors.

The Great Lakes mayors are strongly encouraged by the support of many members of Congress, and we look forward to working cooperatively with you and others in any way we can to advance progress on the Great Lakes.

Members of the
Great Lakes and St. Lawrence Cities Initiative
(85 members: 48 U.S.; 37 Canadian)

U.S. Cities/Towns	Canadian Cities/Towns
Ashland, WI - Mayor Fred P. Schnook	Ajax, Ontario – Mayor Steve Parish
Bay City, MI - Mayor Robert J. Katt	Becancour, Quebec - Mayor Maurice Richard
Brownstown, MI - Supervisor Art Wright	Cobourg, Ontario - Mayor Peter Delanty
Buffalo, NY - Mayor Byron Brown	***Collingwood, Ontario - Mayor Terry Geddes***
Chicago, IL - Mayor Richard M. Daley (Chair)	Cornwall, Ontario - Mayor Phil Poirier
Cleveland, OH - Mayor Frank G. Jackson	Deschambault-Grondines, Quebec - Mayor Jacques Bouille
Detroit, MI - Mayor Kwame M. Kilpatrick	Dorval, Quebec - Mayor Edgar Rouleau
Duluth, MN - Mayor Herb W. Bergson	Durham, Ontario - Regional Chair Robert Anderson
East Chicago, IN - Mayor George Pabey	Fort Erie, Ontario - Mayor Wayne H. Redekop
Erie, PA - Mayor Joseph Sinnott	Goderich, Ontario - Mayor Deb J. Shewfelt
Evanston, IL - Mayor Lorraine H. Morton	Haldimand County, Ontario - Mayor Marie Trainer
Ferndale, MI - Mayor Robert Porter	Halton Region, Ontario - Regional Chair Joyce Savoline
Ferrysburg, MI - Mayor Ray Tejchma	Hamilton, Ontario - Mayor Larry Di Ianni
Gary, IN - Mayor Scott L. King	Kingston, Ontario - Mayor Harvey Rosen
Grand Marais, MN - Mayor Mark Sandbo	Marathon, Ontario - Mayor David Bell
Grand Rapids, MI - Mayor George K. Heartwell	***Montreal, Quebec - Mayor Gerald Tremblay***
Green Bay, WI - Mayor James Schmitt	Niagara on the Lake, Ontario - Mayor Gary Burroughs
Hammond, IN - Mayor Thomas McDermott, Jr.	Oakville, Ontario - Mayor Ann Mulvale
Hancock, MI - Mayor Barry Givens	Oshawa, Ontario - Mayor John Gray
Highland Park, IL - Mayor Michael Belsky	***Parry Sound, Ontario - Mayor Ted Knight***
Mackinaw City, MI - Village President Robert R. Heilman	Port Colborne, Ontario - Mayor Ron Bodner
Manistee, MI - Mayor Robert Goodspeed	Prescott, Ontario - Mayor Robert Lawn
Manitowoc, WI - Mayor Kevin M. Crawford	***Quebec City, Quebec - Mayor Andree P. Boucher***
Marquette, MI - Mayor Tony Tollefson	***St. Catherines, Ontario - Mayor Timothy H. Rigby***
Michigan City, IN - Mayor Charles Oberlie	Sainte Catherine, Quebec - Mayor Jocelyne Bates
Milwaukee, WI - Mayor Tom Barrett	Saint Joseph-de-Sorel, Quebec - Mayor Olivar Gravel
Monroe, MI - Mayor Al Cappucilli	***Salaberry-de-Valleyfield, Quebec - Mayor Denis Lapointe***
Niagara Falls, NY - Mayor Vincenzo V. Anello	Saugeen Shores, Ontario - Mayor Mark Kraemer
Petoskey, MI -Mayor Dale E. Meyer	Sault St. Maire, Ontario - Mayor John Rowswell
Portage, IN - Mayor Douglas W. Olson	Sorel-Tracy, Quebec - Mayor Robert Marcel
Racine County, WI - County Executive Bill McReynolds	The Archipelago, Ontario - Mayor Peter Ketchum
Racine, WI - Mayor Gary Becker	Thunder Bay, Ontario - Mayor Lynn Peterson
Rochester, NY - Mayor Robert Duffy	***Toronto, Ontario - Mayor David Miller (Vice Chair)***
Rochester Hills, MI -Mayor Pat Somerville	Ville de Chateauguay, Quebec - Mayor Sergio Pavone
Royal Oak, MI - Mayor Jim Ellison	Ville de la Praire, Quebec - Mayor Lucie F. Rousell
Springfield Township, MI – Supervisor Collin Walls	Wainfleet, Ontario - Mayor Harry Gord
Sturgeon Bay, WI - Mayor Dennis D. McIntosh	***Windsor, Ontario - Mayor Eddie Francis***
Superior, WI - Mayor Dave Ross	
Toledo, OH - Mayor Carleton S. Finkbeiner	
Traverse City, MI - Mayor Linda Smyka	
Vermillion, OH - Mayor Jean Anderson	
Waterford Township, MI - Supervisor Carl W. Solden	
West Bloomfield Township,MI - Supervisor David Flaisher	
Whiting, IN - Mayor Joseph Stahura	
Wilmette, IL – Village Manager Michael J. Earl	
Windpoint, WI - Board President John Knuteson	
Zion, IL - Mayor Lane Harrison	

Bold italicized font indicates members of the Board of Directors

Mayor
DAVID MILLER

March 14, 2006

The Honorable Richard M. Daley
Mayor
City of Chicago
121 North LaSalle Street, Room 502
Chicago, Illinois 60602

Dear Mayor ~~Daley~~ Richard.

I understand you will testify before the United States Senate, Environment and Public Works Committee, on March 16, 2006 concerning protection and restoration efforts under the Great Lakes Regional Collaboration. I write to reemphasize the importance of this work and my support for your efforts as Chairman of the Great Lakes and St. Lawrence Cities Initiative on behalf of United States and Canadian cities to advance this important cause.

There were a number of Canadian observers to the Great Lakes Regional Collaboration process, and several other Canadian mayors and I were present for the release of the Strategy on December 12, 2005 in Chicago. I am impressed with the quality of the Strategy and the recommendations it contains. It seems important at this time to move forward with implementing the actions contemplated by the strategy, and to obtain the necessary funding to make it successful. I know you are doing everything possible to make that happen.

It is also important to ensure that we fully integrate Canadian and United States efforts on the Great Lakes, and on the St. Lawrence, as well. In Canada, we are about to start discussions about renewal of the Canada-Ontario Agreement concerning the Great Lakes. Implementation of the St. Lawrence Strategy is also moving forward. In addition, the review of the Great Lakes Water Quality Agreement between our countries is beginning, and renegotiation of its terms is likely. Any new agreement will play a key role in defining how we work together and what our approach will be to protection and restoration of the resource. I recently wrote to the Honourable Rona Ambrose, Minister of Environment Canada, and The Honourable Laurel Broten, Minister of the Environment for Ontario, about the importance of local government participation in these discussions.

Our work together with United States and Canadian mayors is certainly a place to begin with the integration of work on the Great Lakes and St. Lawrence. I am aware of the work you are doing with the governors, tribal leaders, and federal officials, and I will be doing the same with the premiers, First Nations, and federal government on the Canadian side. I am confident that we can promote collaboration among the several orders of government in our countries in a true binational spirit that will lead us to a time when our citizens can eat the fish, drink the water,

TORONTO

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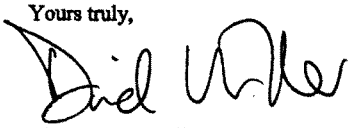
and swim at the beaches of the Great Lakes and St. Lawrence with full assurance that it will add to the quality of their lives.

As Vice Chairman of the Great Lakes and St. Lawrence Cities Initiative and a fellow mayor, I look forward to working with you on this most important task.

Yours truly,



Mayor David Miller
City of Toronto

RESPONSES BY DAVID ULLRICH TO ADDITIONAL QUESTIONS FROM SENATOR INHOFE

Question 1. The Strategy establishes funding levels for each of its goals. However, there seems to be some disagreement as to who will be providing those funds. In your view, how much of the $20 billion in the Great Lakes Strategy do you expect from the Federal Government, the State governments and the local governments?

Response. The Great Lakes Regional Collaboration Strategy (GLRC Strategy) developed by over 1500 people during a 1-year-period included cost estimates for the various programs included in the restoration process. Although there are not precise figures, approximately ⅔ of the money would come from Federal sources, and the remaining ⅓ would be split about evenly between State and local governments, although Federal programs requiring State and local matches often go well above the 33 percent level. Given the national and international nature of the resource, it is not surprising that the largest portion would come from the Federal Government. The United States has formal obligations under the Boundary Waters Treaty, the Great Lakes Water Quality Agreement, the 1955 United States/Canadian Convention on Great Lakes Fisheries that must be met. Also, looking at the magnitude of the resource, its value, and its importance to the quality of life and economy throughout the United States and Canada, this level of investment now will likely avoid much larger expenditures in the future, as has been learned in other recent experiences, such as the hurricanes.

Question 2. The near term actions outlined by the Council of Great Lakes Governors and the Great Lakes and St. Lawrence Cities Initiative in a letter sent to the President on December 12, 2005 and the near term actions developed by the Administration are inconsistent. Given the discrepancies in these near term action items, how can we make sure that the goal of better coordination is met?

Response. The near term action items set out in the letter from Governor Taft, Governor Doyle, and Mayor Daley to President Bush on December 12, 2005, reflect extensive discussion among the members of the strategy teams and of the Executive Subcommittee to the Great Lakes Regional Collaboration. These action items include a mixture of actual restoration projects, monitoring, strategy development, and indicator development, with a heavy emphasis on actual restoration. These actions come out of the GLRC Strategy, and also reflect the public input from over 700 people at public meetings, in addition to the 1500 people who developed the GLRC Strategy. The overall thrust of the GLRC process initiated under the President's Executive order was to move forward with implementation, not just develop another strategy to add to all the plans developed in the past but not implemented. The near term action items from the Governors and Mayor are fully consistent with the spirit of that process.

The near term actions were developed by the Administration were developed outside the GLRC process, and never given to the other parties until the week before the GLRC Strategy was scheduled to be signed. There was no opportunity to work through the two lists to come up with a more consistent list, and the Administration did not indicate any willingness to negotiate. A close look at the Administration's list of 50 actions shows an extensive number of things such as analysis, coordinating, evaluating, reviewing, creating or expanding teams, committees, and task forces, providing guidance, and many other activities that may be of value, but are not tangible Great Lakes restoration work. Many are things are already underway or should have been completed some time ago.

The best way to make sure that the goal of better coordination is met in the future is for all parties to come to the table with the authority to negotiate specific actions that can be taken. All parties need to be flexible in reaching a consensus on near term actions. This is still possible as the GLRC moves forward with implementation.

Question 3. Please provide documentation detailing the roles of the States and local authorities and their contributions to this restoration process, including funding each will provide to meet the objectives outlined in the restoration strategy.

Response. Local authorities have major roles and responsibilities for restoration of the Great Lakes, and have been contributing significantly to the process for some time, as they will in the future. It should be noted that many of these responsibilities are shared with State and Federal authorities. The fundamental responsibility of local government is to build, improve, and maintain infrastructure that forms the foundation for cities. Sound management of the infrastructure and the activities that rely on the infrastructure are essential to the quality of life for the citizens.

Cites and other local authorities have been responsible for providing water supply and wastewater management services to their citizens for a very long time. As the many demands on local budgets have continued to increase, the challenge to expand,

upgrade, and maintain the water infrastructure has become more difficult. Federal and State funding in the form of grants in the past and now lower interest loans has been essential and very helpful. With very few grants available now, the local taxpayers are assuming almost the entire burden of these capital investments and operating expenses.

Storm water management is another activity for local governments. Especially because of the problems with combined sewers, cities are taking steps to reduce and slow flows from roofs, streets, parking lots, and other impervious surfaces. Even such things as street cleaning collects materials for proper disposal, rather than having them carried into the rivers and lakes with the storm water runoff.

The parks, beaches, harbors, and marinas along the shores of the Great Lakes are tremendous assets and require major management attention and financial investment.

Cities, through their park districts and other authorities, must maintain the facilities and upgrade them on an ongoing basis. These facilities are an integral part of the social and economic fabric of the cities, and must be managed in a way that accommodates human use and protects the resource.

The waterfronts as a whole are exceedingly important to the cities along the Great Lakes. Maintaining their vitality, and revitalizing them where this is needed, are major items on the agendas of cities. Most of the cities have some form of waterfront plan in the conceptual, planning, or implementation stage. Mayors are instrumental in putting together the public, private, and non-profit partnerships that make this revitalization possible. Cities are seeking to do this in a sustainable way that will preserve the waterfront for the long term.

Dealing with invasive species is another responsibility that local governments share with State and Federal Governments. Although comprehensive national aquatic invasive species legislation is a far more cost effective way to reduce the flow of invasive species to the Great Lakes, until such time as Congress acts, State and local governments have taken steps within their jurisdictions to address this problem. States and cities have passed or are considering legislation that would restrict the introduction of such species. In addition, cities must deal with such problems as keeping water intakes and beaches clear of zebra mussels.

Cities are working to keep toxic waste out of the Great Lakes. Several local authorities have had successful programs to reduce the amount of mercury that gets into the wastewater stream. Household hazardous waste collections keep these materials from being put in landfills or dumped down drains.

These are just some of the many things local governments are doing to protect and restore the Great Lakes. State and tribal governments are also very active, and there responses to these questions will address their roles and responsibilities.

RESPONSES BY DAVID ULLRICH TO ADDITIONAL QUESTIONS FROM SENATOR JEFFORDS

Question 1. Mr. Ullrich, can you describe the effect that the significant budget cuts in clean water spending proposed by the President will have on the ability of cities to take care of water infrastructure issues?

Response. The effects of the significant budget cuts to the clean water State revolving fund will have serious effects on the ability of cities to take care of water infrastructure issues. The investments needed on the Great Lakes alone to deal with sewer overflow problems are in the many billions of dollars. The low interest loans from the various federally financed revolving funds are an essential financing option available to cities for these investments. As those funds have been cut back nationally, the availability of financing these critical improvements for cities goes down and they fall further behind in maintaining the infrastructure.

If the Administration's FY07 budget proposal to fund the CWSRF at $687.6 million is approved, this would equate to a cut of $240 million to the eight Great Lakes States when compared to FY01 when the CWSRF was fully funded. This cut translates to a direct hit on communities. It is particularly damaging now, because many communities face rapidly escalating costs for water infrastructure repairs and upgrades, which are needed to ensure clean and safe local waters, and it especially troubling for the Great Lakes region, where many cities are older and have aging water infrastructure. Faced with such significant reductions in Federal water funds, many municipalities must sacrifice other important local needs or increase local water rates for consumers.

Question 2. Mr. Ullrich, do you have any comments on the effectiveness of EPA programs for assistance to the States and Tribes for water quality issues?

Response. The EPA programs for assistance to the States and Tribes for water quality under the Clean Water Act are generally sound and well established in over

30 years of implementation. Based on the foundation of Federal water quality criteria and State water quality standards, all of the programs have a clear set of goals to achieve. The National Pollutant Discharge Elimination System permit program resulted in a dramatic reduction of pollutants discharged from point sources, and lead to major water quality improvements. Central to the success of that effort was the Federal and State funding to help pay for municipal wastewater infrastructure. Many efforts for dealing with non point source pollution under Section 319 of the Clean Water Act have been very successful. Some of the more recent work under watershed programs shows great potential for future water quality improvements.

Other program areas have not been as effective. The process of setting total maximum daily loads for streams, then getting the necessary reductions from point and non point sources has been very slow. Monitoring has not been funded at the level necessary to have a good picture of water quality over time for many of our lakes, rivers, and streams. Numerous, uncoordinated and in some cases conflicting programs administered by multiple agencies have resulted in minimal advancement in Great Lakes restoration and protection. For example, EPA has only a small portion of the wetland programs, and the remaining wetland programs are spread out over a number of Federal Agencies, and suffer from a lack of coordination that could make them much more effective. Because of the critical importance of wetlands from a water quality, flood control, and habitat perspective, there needs to be much more consolidation and coordination of the Federal effort.

Funding is probably the most serious problem faced across all programs. As State and Federal budgets are strained, the water programs have often suffered the most. Without adequate resources, the water programs will fall further behind in trying to reach the goal of being able to drink the water, eat the fish, and swim at the beaches of all of our lakes and streams.

Question 3. Mr. Ullrich, can you describe your thoughts on the need for comprehensive invasive species legislation?

Response. Comprehensive national invasive species legislation is essential if we are going to protect our ecosystems and avoid even more costly problems caused by the introductions of species from across the globe. In this area, we have one of the few opportunities to prevent a problem before it develops. This must be done on a national basis, and coordinated closely with both Canada and Mexico, because there are so many potential pathways for the invasive species. Aquatic and terrestrial plants and animals are all threats. The elements of effective legislation should include, at a minimum:

- ballast water discharge limits that protect the receiving waters from invasive species, force the development of better technology, apply as soon as possible, and move toward a goal of no discharge of viable organisms;
- new vessels would have to meet the tighter standards immediately upon operation;
- old vessels must meet stringent best management practices until they meet the new standards;
- ships claiming no ballast on board would need to meet all standards hull management requirements;
- comprehensive programs for non ballast water introductions, including stringent review of all organisms in trade before they are brought in, especially if introduced for aquaculture;
- rapid response capability to eradicate or limit the spread of newly introduced species;
- expanded monitoring and research to better understand the potential for introducing new organisms, detecting introductions, and improving treatment methods;
- better information, education, and outreach so the public and the business community better understands the threats from invasive species and how to prevent their introduction;
- enforcement, and provide adequate resources for the task;
- full coordination of the entire effort with Canada (for the Great Lakes) and Mexico;
- strong enforcement of the requirements with appropriate sanctions to deter the violations;
- no pre-emption of State or local laws;
- preserve Clean Water Act authority to regulate, if necessary.

While this legislation is pending, as it has been for a number of years, more invaders come into our country on a continuing basis. In the Great Lakes alone, one new species about every eight months arrives. The potential costs and damages each one could inflict are substantial. It makes no practical sense for individual States

and cities to pass laws and ordinances to try to stem the flow, when this is a matter of interstate and international commerce that should be dealt with at the Federal level. In addition, when there is Federal authority to act, like under the Lacy Act for dealing with injurious species such as the black, silver, and bighead carp, Congress needs to hold agencies accountable for timely action.

RESPONSES BY DAVID ULLRICH TO ADDITIONAL QUESTIONS FROM SENATOR VOINOVICH

Question 1. How much funding are the cities contributing to Great Lakes restoration?

Response. We do not have an accurate figure that covers all the expenditures on Great Lakes related matters for cities from the United States, or from Canada. However, the Great Lakes and St. Lawrence Cities Initiative (GLSL Cities Initiative) performed an informal survey of eight cities represented on the Board of Directors for a variety of capital and operating expenditures on a variety things. The results showed that these cities were spending, on average, about $200 million annually on capital and operating expenses. The categories of expenditures included: wastewater, drinking water, storm water, constructed wetlands, lakefront parks, watercourse/flood protection, shoreline protection, redevelopment, and pollution prevention. These were medium to larger cities, and there were several Canadian cities included. The average across all cities would be lower, but these eight alone amount to almost $2 billion annually for operating and capital expenditures together.

Question 2. How can we better coordinate this massive restoration effort?

Response. The Great Lakes Regional Collaboration was an excellent effort on the part of all participants, and we need to take full advantage of the outstanding work done by everyone. The success of the effort goes well beyond coordination, and includes a number of factors. First, with the amount of planning done in the past, including the GLRC strategy, there must be an understanding that, now, far more emphasis should be placed on implementation than on planning. Second, more accountability at individual levels of government and collectively among the parties will be very important. Third, stronger leadership at each level is essential for success. Periodic Congressional oversight hearings would help in this accountability process. In addition, it would improve the overall performance if the parties could agree upon a central leadership position or authority to provide more direction to the efforts of all the parties. Fourth, the goals and objectives in the GLRC strategy should have timelines attached to them so that progress can be tracked against schedules. Fifth, substantially more funding will be required to move forward with restoration, and Congress, State legislatures, city councils, and tribal councils, as well as the private and non-profit sectors, need to work very hard on this. These are not all the actions needed, but are some of the most important for improving coordination and success on Great Lakes restoration.

Question 3. How can we better coordinate Great Lakes programs at all levels of government so that we are more efficient and effective?

Response. Looking at just the issue of coordination, we have the mechanism in place to improve coordination across all programs at all levels of governments by fully utilizing the Great Lakes Regional Collaboration Executive Committee and the Implementation Framework. This should be the focal point for communication, coordination, and action. It would be helpful if the parties would look at the other Great Lakes institutions and Federal programs that have been created over the years to see if some of them are redundant and could be reformed, consolidated, or discontinued. This could help reduce the burden of travel time and meeting time on many of the participants and also might better clarify roles and responsibilities.

Question 4. What can cities do to raise the profile of this restoration effort beyond the region?

Response. Cities are currently taking actions to raise the profile of this restoration effort beyond the region, and will continue to do so in the future. The leadership of the GLSL Cities Initiative has traveled to Washington, DC, on a number of occasions to testify before Congress, meet with Administration officials, and speak at Great Lakes gatherings. Because the GLSL Cities Initiative has members from both the United States and Canada, an from the St. Lawrence and the Great Lakes parts of the basin, we are raising the profile in a large portion of Canada that has a significant portion of the Canadian population. We also will be more involved in Canadian matters in Ottawa. Representatives from the GLSL Cities Initiative recently participated in the World Water Forum in Mexico City. GLSL Cities Initiative also plans to be more visible in the U.S. Conference of Mayors activities.

Question 5. What is the key to keeping together all of the groups involved in the creation of the blueprint strategy in order to implement the goals established by the Collaboration?

Response. Several things are key to keeping the groups together for implementing the GLRC Strategy. First, all parties need to commit to the GLRC Executive Committee and Implementation Framework. This should serve as the driving force in all the actions taken by the various levels of government and the private and nonprofit parties. Second, the focus must be on implementation rather than more planning. Even without significant increases in funding, the parties must figure out how to move forward. Third, it is important to celebrate all levels of success under the GLRC Strategy. In order to achieve success, additional funding will clearly be needed. This will give all the parties the encouragement that they need to continue their efforts. Fourth, effective communication among the parties so that work is coordinated, and that there are no surprises. These actions should all help keep the parties together.

Question 6. Please elaborate on how the mayors and the entire Collaboration are working with Canada and their restoration activities.

Response. The GLSL Cities Initiative mayors from the United States are working with the Canadian mayors on a continuing basis. The Board of Directors, consisting of eight mayors each from the United States and Canada has monthly conference calls and a midwinter meeting to make sure that efforts are moving forward in both countries. The GLSL Cities Initiative has an annual meeting of all members, plus many outside guests, to showcase much of the work that has been done and what is planned for the future. As part of the planning for the future, the GLSL Cities Initiative is nearing completion of a business and operating plan that should be approved at the June 2006 annual meeting and will serve as a guide for the next 3 years for activities in both countries. The GLSL Cities Initiative also plans to open an office in Toronto in the near future so that activities in Canada receive the necessary attention. The web site for the GLSL Cities Initiative is also place where the work in both countries is shown for the benefit of all members and the broader public. Much as the mayors were extensively involved in the Great Lakes Regional Collaboration in the United States, the mayors will also be participating in discussions on the new Canadian Ontario Agreement and on the St. Lawrence Action Plan. With the review and revision of the Great Lakes Water Quality Agreement underway, representatives from cities are already engaged in those discussions.

The States work with the Canadian provinces in the context of the Council of Great Lakes Governors and the Great Lakes Commission. The Native American Tribes have a working relationship with the First Nations in Canada, and have been developing a Great Lakes organization. At the Federal level, the Binational Executive Committee is the primary place for interaction. Many of the parties also participate in the activities of the International Joint Commission.

RESPONSES BY DAVID ULLRICH TO ADDITIONAL QUESTIONS FROM SENATOR OBAMA

Question 1. Are the mayors concerned that they may be left out of Federal decisionmaking regarding how priorities are determined and how resources are allocated?

Response. For many years, mayors and other representatives of local governments were not included in Great Lakes decision-making. That has changed significantly over the past 3 years. The mayors are now included as full and equal partners in the Great Lakes Regional Collaboration, the Agreement Review Committee for the Great Lakes Water Quality Agreement, the International Joint Commission—Water Quality Board, and have served on a number of advisory committees. The Council of Great Lakes Governors has been especially inclusive to the mayors in much of their work. The tribal organizations and many Federal agencies have also reached out to the cities. The mayors are confident that when resource distributions are considered, the cities will be included in the deliberations.

Question 2. How will the mayors be coordinating their future restoration efforts across the region?

Response. As noted above, the mayors will be working as part of the Great Lakes Regional Collaboration Executive Committee to coordinate its activities with the other orders of government. For coordination with other cities, the GLSL Cities Initiative is in continuing contact with its members to make sure that its work is planned and implemented effectively. There are over 80 cities from the United States and Canada that have been involved in efforts to protect and restore the Great Lakes, and they are working with one another through the organization web

site, sharing things such as best practices in different cities and information about developments at the national, regional, State, provincial, and local level. Through the annual meeting, many members come together to showcase especially successful efforts, pass resolutions to convey the organization's position on key issues, and create opportunities for joint efforts on protection and restoration of the resource. The Board of Directors meets monthly by conference call and mid-year in person. There is a newsletter that shares information on key actions of the organization and its members.

Question 3. Given the number of people who depend on the Great Lakes for their drinking water, how critical is it that we restore the health of the Great Lakes?

Response. The Great Lakes are probably one of the most valuable resources, if not the most valuable, to the citizens, governments, and businesses in this region of Canada and the United States, as well as providing benefits to the rest of both countries. The contributions to the social, economic, and ecological well being of the region are tremendous, and go well beyond just their value as a drinking water supply. With the increasing concerns about adequate water supplies around the world, the value of the Great Lakes for that purpose alone will continue to increase significantly. There are very major threats to the integrity of the resource that will increase with time. If the United States and Canada do not recognize the very high priority of investments in protection and restoration, its value will diminish, like any other asset, for the many uses it offers such as a domestic water supply, food source, recreation location, and many others. In fact, cost burdens from such things as invasive species will likely increase, as well. We should not learn the lesson the hard way on the Great Lakes like we have in other areas of the country where timely investments could have avoided astronomical costs.

Question 4. People outside of the Great Lakes region often assume that restoration of the Lakes is a regional issue. Is it the opinion of your organization that the health of the Great Lakes is a national issue? If so, why?

Response. Restoration of the Great Lakes is clearly a national issue. There are many reasons for this. The sheer volume of the resource, being almost twenty percent of the surface fresh water in the world, makes it internationally significant. Because they are shared with Canada, and forms much of our northern border, the Great Lakes must be addressed on a national level. They provide a flow of interstate commerce, not only in the region, but to other parts of the country, making it important to other parts of the country. The boating, fishing, and other recreational opportunities add billions of dollars to the economy and attract people from all over the country, as well. Much as the Everglades, the Rockies, Chesapeake Bay, and other features of our landscape help define us as a country, the Great Lakes are very much a part of the identity of the United States.

STATEMENT OF GEORGE H. KUPER, PRESIDENT, COUNCIL OF GREAT LAKES INDUSTRIES

Good morning. Thank you for your leadership in and support of the Great Lakes Restoration Strategy. And, thank you also for this opportunity to express our support for the breadth and comprehensiveness of the Strategy and to express industry's perspective.

I am here today representing the Council of Great Lakes Industries (CGLI), which is made up of three dozen United States and Canadian companies and industrial associations with significant investments in the Great Lakes basin. CGLI is a member driven organization focused exclusively on policy issues in the Great Lakes Region. We have substantial experience in the function of multi-stakeholder, consensus-building efforts and our individual members have real world, practical experience of doing business in the Great Lakes region. In CGLI, work gets done by the members and is developed from members' priorities. The mission of our organization is "promoting the economic growth and vitality of the region in harmony with its human and natural resources" or in other words, sustainable development.

Industry has been, and continues to be, actively engaged in a range of basin-wide and local initiatives to address the issues in the Great Lakes Restoration Strategy. Council of Great Lakes Industries' members and senior public policy managers from Great Lakes industrial organizations were actively involved in the Collaboration process.

Like many others, I am here today to represent industry's support for environmental restoration in the Great Lakes. In order to avoid repetition, I will focus on issues that others might not mention—issues that we believe must be considered for the sustainable development of our Great Lakes Region. This testimony will evi-

dence industry's support for the Restoration Strategy; the national significance of investing in the restoration of the Great Lakes region; and, some specifics of the Strategy that we feel are worthy of attention.

I. From industry's perspective, we view the Collaboration's Restoration Strategy as a useful guide to many of the—primarily environmental-concerns of the citizens of the Great Lakes basin. We welcome the 12 December 2005 commitment of the Great Lakes Governors, Federal administrators, the Great Lakes-St. Lawrence Mayor's organization, Tribal Leaders, and others to develop a plan for going forward. There is a need to address the uncertainty surrounding what happens next, making sure that rigorous analysis, including risk assessment, is conducted before priorities are set and programs funded. Therefore, we look forward to the release by the Collaboration Executive Committee of their priority plans for the continuation of the GLRC and implementation of the Restoration Strategy.

The Collaboration process has given the region an opportunity to do things differently. It was a complicated, multi-stakeholder process. But it provided a chance for many participants to offer input. Unfortunately, the process did not always include enough rigor to determine the true costs and societal benefits, and accurately determine priority needs—needs we trust will be addressed by the Executive Committee's plans. We also hope they will include ways to streamline the implementation process for priority programs. But, the multi-stakeholder process did allow some industry representatives to bring their important and sometimes unique perspective to the individual task groups including:

- a scientific focus;
- details regarding accomplishments in the basin over the last three decades and industry's role in the significant reduction of persistent, bio-accumulating toxics releases;
- recognition of current regulations and the roles they play in protecting the environment;
- an understanding of what encourages sustainable economic development and what does not; and,
- experience regarding the real costs associated with achieving specific objectives.

Not surprisingly, we industrial representatives feel that the entire focus of the Collaboration should be on sustainable development. A healthy environment, social progress and a strong and vibrant economy—all elements of sustainable development—are essential to the well-being of our Region's, and the country's, manufacturing economy. The environment is only one leg of the three-legged sustainable development stool—the other legs are social and economic. It is important to remember that the environment is an arena where the region has worked hard and effectively to change the way we do things. While we still face challenges, we are achieving environmental improvement. Our big challenge now is to continue to improve the environment while increasing jobs and the tax base that support education and quality of life. This is not to say that we're in a "jobs verses environment" situation. The people of the Great Lakes Region need a healthy environment and the jobs that support them. The two are inextricably linked. We can't have one without the other. It is the infrastructure necessary to provide for a healthy environment that is in need of attention.

II. It is important for us all to understand that successful implementation of the Great Lakes Restoration Strategy is not just a Great Lakes Regional issue. The Great Lakes Region is a vital component of the U.S. economy. A strong Great Lakes economy is very important for the country as a whole.

The Great Lakes Region is responsible for producing a third (32.5 percent) of the U.S. gross State product [based on Gross State Product, 2004]. We do this from a population base of 40 million people or less than a quarter of the Nation's population.

But, we need your help. The Region that has made this significant contribution to the Nation's economic welfare is now in need of the Nation's care and attention. Our manufacturing base—60 percent of all U.S. manufacturing—is clearly having problems. The global information and communications revolution is contributing to a critical period of what economists refer to as "creative destruction" in the region's economy. The old ways of doing business are giving way to the new ways of doing business and some of our industries and many of our citizens are caught in this transition. At the same time our manufacturing base must implement significant productivity improvements in order to reduce costs and strive to remain globally competitive.

In order to protect this contribution to the Nation's GDP, the region is going to need the Nation's investment. Industry is working hard to identify the things needed to be done to improve our productivity and our competitiveness. In addition to individual company efforts, there is the newly formed Great Lakes Manufacturing

Council which has identified some common elements of manufacturing competitiveness that can be worked on collectively. That agenda is similar to the agenda of the National Center for Manufacturing Sciences, which develops new technologies for common factory functions. The outcomes from these collective efforts will be available to manufacturers throughout the country. In the region we will need new investment to apply the results. We will need to attract significant private investment in new plants and equipment to harvest the productivity improvement opportunities we have identified. We need to capitalize on the talent of the people in this Region, their up-graded skills and our R&D successes. And, I must add, that new investment will be easier to attract when the national problems related to the transition from industry supported health care and retirement burdens—which sit disproportionately on the Region and make us less competitive are fixed.

A vibrant sustainable development infrastructure is a key ingredient in attracting essential industrial investment. A significant Federal commitment to the Region in support of modern and improved water and wastewater infrastructure will have a profound impact on the economy of the Region and the Nation as a whole. Public funding and pursuit of key parts of the Restoration Strategy will have a positive economic development impact on the Region. We are currently trying to organize a study jointly with the Healing Our Waters/Great Lakes Coalition and Mr. Buchsbaum in order to understand how to quantify these positive economic impacts. We hope to be able to report back to you specifics on the spin-off economic development impacts you can anticipate from funding the Restoration Strategy.

III. Industry has specific ideas about how we can begin to focus on and achieve sustainable development within our region using the outputs from the Collaboration. Setting the right priorities are important. As we've said, our resources are strained and the needs are many.

Some of the Restoration Strategy identified needs that we feel are important to the development of our economy include:

• Coastal Health.—We believe the sewage treatment capacity in the basin needs to be expanded and improvements funded. These infrastructure improvements are essential to protect the Great Lakes ecosystem and also positively impact future economic development in the region.

• Areas of Concern (AOCs) and Sediments.—We have testified in support of the original legislation and for an increase in funding for the Great Lakes Legacy Act (GLLA) in the past and we continue to support it. The Restoration Strategy calls for—and we support—streamlining the approval process and improving coordination between all the levels of government to speed-up clean-ups. The proposed increased flexibility in selecting sediment treatment and disposal options is good policy. The GLLA deserves to be fully funded.

• Toxic Pollutants.—We've made a lot of progress in this area. And there is much more to do. But things have changed. Because of the substantial reductions made, it is now critically important to consider the magnitude and relative importance of remaining levels of these materials from risk assessment and management perspectives to ensure that resources are directed to reductions that will have meaningful outcomes. The industries I represent—and others—are heavily involved in the Great Lakes BiNational Toxics Strategy (GLBTS) where we are working hard and meeting the targets for substance release reduction/elimination and timetables set out within this program. But, a word of caution on issues like mercury and other substances of concern. If, in our efforts to "virtually eliminate" (whatever that means) this naturally occurring substance we become more restrictive on operations in the Region, we will make our Region less competitive and cripple economic development. This means that informed risk-based solutions are needed, not arbitrary additional reductions in pursuit of broad non-quantified policies.

• Non-Point Sources.—We support the recommendations of the task group that are directly related to the control of pollution from indirect sources. And we support the deployment of Best Management Practices (BMPs) as a reasonable approach to dealing with the current circumstances prevailing in the Basin.

• Aquatic Invasive Species.—The Restoration Strategy calls for important actions—like the carp barrier—that should be actively pursued in order to preserve the efficacy of Great Lakes shipping and preserving our access to world markets. We support these.

• Information and Indicators.—Coordinated monitoring and assessment is essential to ensuring success in Great Lakes protection and restoration efforts. The collection of information is vital but we need to make sure we make the right decisions and we need to measure the right things. And, we must make this information readily available to track progress and support research.

• Sustainability.—While in support of the recommendations from this area, we are disappointed that it has been split out as a separate area of the Collaboration.

As I said before, sustainable development is not one segment of this effort but the overriding enabler needed to support both the environment and economy in our Region. The balancing of environmental, social and economic factors is key to each element in this Restoration Strategy. It should form the organizing framework of the entire strategy.

Again, while these actions will improve the environment, they will also add to the economic viability of the region currently under enormous economic pressure.

Looking at the Restoration Strategy as a whole, we should all understand that there must be a shift in emphasis from some old programs and their obsolete objectives to new areas. We must make the most efficient use of public dollars to meet Restoration Strategy objectives, especially when funding for existing programs can be directed and/or redirected to meet Restoration goals. Programs such as the BiNational Toxics Strategy and the State of the Lakes Ecosystem Conference have great potential to satisfy some critical needs raised in the Strategy.

Industry in the region—where many companies are in a fight for their continued existence—supports many of the initial recommendations of the Restoration Strategy, as we understand them. Many of these programs deserve funding for the betterment of our great region. But, we must caution that the economic viability of the region needs to be a part of each funding decision, not only for the sake of the Region, but the good of the country.

Thank you for this opportunity to share our experience. Please call on us to provide additional information and perspectives.

RESPONSE BY GEORGE H. KUPER TO AN ADDITIONAL QUESTION FROM SENATOR INHOFE

Question. The Strategy establishes funding levels for each of its goals. However, there seems to be some disagreement as to who will be providing those funds. In your view, how much of the $20 billion in the Great Lakes Strategy do you expect from the Federal Government, the State governments and the local governments?

Response. We support the Strategy recommendation for funding. According to the Strategy recommendations, the most important item for support through Federal, State and local funding is in response to the Coastal Health recommendations for improvements to wastewater treatment systems. As part of a 55/45 percent Federal/local cost share $7.535 billion in Federal grants would be made available over 5 years. These Federal funds would stimulate commitment to the required State and local resources of $6.21 billion over the 5-year period. Other funding recommendations, such as those regarding Areas of Concern, provide for full funding of existing programs such as the Great Lakes Legacy Act. And, some of the funds called for in the Strategy are not really new monies since they will include the redirection of funds in current programs.

RESPONSES BY GEORGE H. KUPER TO ADDITIONAL QUESTIONS FROM SENATOR VOINOVICH

Question 1. What is the key to keeping together all of the groups involved in the creation of the blueprint strategy in order to implement the goals established by the Collaboration?

Response. The Collaboration has created a very large collective group of citizens, government representatives, tribal interests, industry people, environmental groups and others who actively participated in the Collaboration process. Some participants were interested in one particular issue workgroup while others participated on several groups. A key to keeping these groups and individuals involved is communication. They need to be informed about the continuing process, the progress on the issues addressing their particular concerns and, most importantly, opportunities for their continued involvement so that the priorities they are concerned about can be addressed.

The Great Lakes Collaboration Implementation Act (SB 2545 & HR 5100) calls for the Collaboration to serve three roles. The first is to develop and maintain as current the protection strategy. The second is to serve as a forum to address near-term regional issues relating to ecosystem restoration and protection. Third is to establish an oversight forum to coordinate and enhance implementation of Great Lakes programs. To accomplish these objectives, an ongoing two-way communication effort has to be maintained and opportunities for meaningful involvement offered.

Question 2. How can we best coordinate this massive restoration effort?

Response. The Restoration Strategy identifies many stakeholders' concerns regarding threats to the Great Lakes eco-system. And, it outlines specific needs to address restoration objectives. Coordination of the actions necessary to deliver on those needs fall into several different categories:

- Reviewing and revising existing program activities as they may relate to restoration objectives with a view to increase funding in pertinent areas;
- Abandoning those programs which have either accomplished their objective(s) or are not likely to do so, in favor of new approaches and new objectives; and,
- Create new programs where no existing program is now in place to respond to the restoration need.

The proposed restoration activities will be beyond the scope of any single Federal Agency. And many of them will have a bi-national component. Therefore, a different governance structure will be necessary.

We haven't yet reviewed thoroughly The Great Lakes Collaboration Implementation Act introduced in the U.S. Senate (SB 2545) and House of Representatives (HR 5100) earlier this month. This legislation has presumably been crafted to coordinate the implementation of the Collaboration priorities. We will be studying the proposed coordination of Federal efforts through the Interagency Task Force and overall coordination through the Executive Committee of the Collaboration. But, we are initially predisposed to see that proposal as inadequate because of the immense scope of the restoration and the role that must be played by numerous stakeholders. A successful coordination and governance effort will require the provision of roles for stakeholders. This does not seem to be a part of the existing structure.

Question 3. How can we better coordinate Great Lakes programs at all levels of government so that we are more efficient and effective?

Response. See response to No. 2 above.

Question 4. What can industry do to raise the profile of this restoration effort beyond the region?

Response. Industry was an active participant in and supporter of the Collaboration process and will continue to participate. Industry is eager to see a restoration process with priorities determined on the basis of risk and focused on a sustainable Great Lakes Region. Industry fully understands the importance to the national economy of the Great Lakes Region, as we produce more than 32 precent of the Gross State Product. We are working to raise the profile of Great Lakes Restoration within our member companies, most of whom are international in scope, and within our trade associations that have national reach. Further, industry is working to bring these issues to the attention of law makers at the Federal, State and local level.

More specifically, the Council of Great Lakes Industries (CGLI) is working with the environmental community on a project to document the national economic benefits of Great Lakes restoration. CGLI and the Healing Our Waters Coalition (HOW) are cosponsoring a Brookings Institution study on the benefits of Great Lakes restoration on both the Great Lakes and national economies. We believe that the results of this study will facilitate national support for Great Lakes restoration.

STATEMENT OF ANDY BUCHSBAUM, DIRECTOR, NATIONAL WILDLIFE FEDERATION'S GREAT LAKES OFFICE AND CO-CHAIR, HEALING OUR WATERS®—GREAT LAKES COALITION

Mr. Chairman, members of the committee, thank you for this opportunity to testify before you today on this issue of critical national importance: Great Lakes protection and restoration. My name is Andy Buchsbaum, and I come here wearing two hats. First, I am the director of the National Wildlife Federation's Great Lakes Office. NWF is the America's oldest and largest conservation organization, with one million members and affiliated organizations in 47 States. The second hat I wear is as the co-chair of a broad-based national coalition, the Healing Our Waters—Great Lakes Coalition, dedicated to the protection and restoration of the Great Lakes. The Healing Our Waters ("HOW") Coalition is truly national in scope with 85 national, regional, State and local organizations. These include Great Lakes State and regional conservation organizations such as the Alliance for the Great Lakes, Great Lakes United, and the Ohio Environmental Council; national conservation organizations like Ducks Unlimited, National Wildlife Federation, National Parks Conservation Association, Trout Unlimited, the Sierra Club, the Nature Conservancy and the Audubon Society; educational institutions such as Shedd Aquarium and Brookfield Zoo; and government representatives such as the County

Executives of America. A full list of the Healing Our Waters Coalition accompanies this testimony as Appendix A.

My testimony today will focus on three areas: the importance of a healthy Great Lakes to the Nation; the accelerating deterioration the Great Lakes are currently experiencing; and the critical role of the Great Lakes Regional Collaboration recommendations in stopping and reversing the lakes' precipitous decline. The bottom line is this: making a substantial investment in the Great Lakes now will earn a significant economic and ecological return for the region and the Nation. Delaying that investment will make future actions far more costly, and likely will result in irreversible damage to this national and global treasure.

THE GREAT LAKES: A NATIONAL PRIORITY

The Great Lakes certainly define the region for the 42 million people who live there. They mean more to us than places to swim or fish or hike; more than places to watch a beautiful sunset or hike through some of the world's most beautiful dunes and national lakeshores; more than our source of drinking water; more than the lifeblood of commerce and industry. For those of us who live there, they are part of our way of life, the way we define ourselves and our future. When I was growing up on the outskirts of Chicago, the high points of each summer were my trips to Lake Michigan's North Avenue Beach in Chicago, the Indiana Dunes, and the Warren Dunes in Michigan. My friends and I would play in the water, race down the dunes, and watch the incredible sunsets over waters so vast you could not see the other side. And now my family is reprising those wonderful times. The best part of my sons' summers are when we go up north to roam the shoreline of Lake Superior, swim in the bone-biting cold of its waters, and watch those spectacular sunsets. The lakes create the memories that bind our family and millions of others, and link my generation with my parents' and my children's.' They are the defining features of our physical world, our continuing constant.

So it is no surprise that the Great Lakes are a top priority for those of us who live there. A 2003 Joyce Foundation poll asked Great Lakes residents if protecting and restoring the Great Lakes is important; 96 percent said yes. Ninety 6 percent. You can't get 96 percent to agree on what day it is—but they agree on the importance of the Great Lakes.

It is equally clear that the health of the Great Lakes is critically important to the Nation as a whole. Even if you live in our region, it is hard to appreciate their vast size and scope and how they define our nation's geography. These lakes constitute 95 percent of the surface freshwater in the United States. They have a coastline of 10,000 miles—longer than the combined U.S. coastlines of the Atlantic and Pacific Oceans. They supply the drinking water, shipping, recreation, and economic lifeblood to millions of people in eight States. They constitute a 1,000-mile border between the United States and Canada. They are continental features that attract migratory birds from the Canadian Arctic to South America. Millions of migratory waterfowl breed in the Great Lakes and then fly to the eastern and southern United States to supply hunters and birdwatchers from New Jersey to Louisiana.

The Great Lakes are a national resource. Tom Kiernan, the President of the National Parks Conservation Association and co-chair of the Healing Our Waters coalition puts it this way: "The Great Lakes are national icons, a beautiful natural treasure you can see even from space. Like the majestic Grand Canyon and Everglades, these inland oceans help define the soul of a region and the landscape of a nation." Their national importance has prompted 11 national organizations to actively participate in the Healing Our Waters campaign to protect and restore them. Leaders from around the country—including those from the Chesapeake Bay, Restore America's Estuaries and Coastal Louisiana, each of which also have national iconic status and pressing needs for restoration—understand the national importance of the Great Lakes and their need for protection and restoration:

> "Like the Chesapeake Bay, the Great Lakes are resources of national significance. They have helped shape our history as a Nation and they have provided immeasurable recreational, economic, and cultural opportunities for our citizens. Unfortunately, they share a history of insufficient investment in their protection and restoration. National attention, national funding, and national commitment to the restoration of natural resources like the Chesapeake Bay and the Great Lakes is critical for us, as a Nation, to ensure a legacy of clean water, abundant fisheries, and economic development for future generations." Roy A. Hoagland, Esq., Vice President, Environmental Protection and Restoration, Chesapeake Bay Foundation
>
> "The Great Lakes are extraordinary resources of national importance, and they require national attention and funding to get back to health. Like the

Great Lakes, many of our nation's Great Waters—such as Puget Sound, the Louisiana Coast, the Everglades or Chesapeake Bay—are in grave condition. Investments in the restoration of these critical ecosystems will repay us many fold, and will benefit the Nation as a whole." Mark Wolf-Armstrong, CEO of Restore America's Estuaries.

"The Great Lakes are of national importance. If we can't save Coastal Louisiana, we can't save the Great Lakes, and vice versa. It can't be that we have to choose one place over another, or we'll be set up to fail everywhere. The consequences to the Nation of inaction or delay are enormous. We cannot afford to wait, either here in Coastal Louisiana or in the Great Lakes." Mark Davis, Director, Coalition to Restore Coastal Louisiana

The Great Lakes' economic importance to the Midwest and the Nation also is immense. The Great Lakes annually generate billions of dollars of economic revenue directly:

- Tourism in Ohio is a $7 billion industry sustaining over a quarter of a million jobs.
- In Michigan, tourism generates $16 billion annually, and in Wisconsin, $11.8 billion.
- Hunting, fishing and wildlife watching account for more than $18 billion annually in the Great Lakes States.

But the economic impact of the Great Lakes is far greater than this. Twenty-five million people rely on the Great Lakes for their drinking water. Industries such as auto, power, agriculture, and steel depend on them to supply and cool their industrial processes. Consumers and businesses throughout the region and the Nation rely on them for the shipment of goods such as grain, steel, and manufactured goods. The Great Lakes define not just the recreational and ecological footprint of the region; they drive the economic opportunities in the Midwest.

The economy of this region is vitally important to the Nation. As you will hear from George Kuper, the director of the Council of Great Lakes Industries, fully one-third of the Nation's economic gross state product is produced by the Great Lakes region. And as Mr. Kuper will tell you, the Great Lakes are the natural infrastructure that supports that productivity; we believe their health is critical to our economy of the Midwest and the Nation.

The Healing Our Waters Coalition is partnering with the Council of Great Lakes Industries and the Brookings Institution to organize an independent study of the ways in which investing in Great Lakes ecosystem restoration will support the economy of the region. When that study is completed, we will be happy to share it with the committee.

A RESOURCE IN PERIL: "ECOSYSTEM BREAKDOWN"

Despite their vast size, the Great Lakes are fragile. In recent years, the Great Lakes have been increasingly plagued by beach closings due to untreated sewage; invasions by harmful exotic species (on average, one new invasive species enters the Great Lakes every 8 months); contamination of sportfish and commercial fish; and loss of habitat for wildlife. Each of these and other problems has been viewed as a separate challenge to be researched and addressed independently; few have tried to assess the condition of the Great Lakes as an ecosystem and design solutions on that basis. Until last year.

Last December, over 60 of the leading scientists in the Great Lakes region issued an alarming report. In a paper titled "Prescription for Great Lakes Ecosystem Protection and Restoration" (accompanying this testimony as Appendix B), the scientists concluded that the Great Lakes are experiencing an historic crisis. Deterioration of large sections of their ecosystem is accelerating dramatically, and if not addressed now, the damage is likely to be irreversible. In their own words:

"There is widespread agreement that the Great Lakes presently are exhibiting symptoms of extreme stress from a combination of sources that include toxic contaminants, invasive species, nutrient loading, shoreline and upland land use changes, and hydrologic modifications. . . In large areas of the lakes, historical sources of stress have combined with new ones to reach a tipping point, the point at which ecosystem-level changes occur rapidly and unexpectedly, confounding the traditional relationships between sources of stress and the expected ecosystem response. There is compelling evidence that in many parts of the Great Lakes we are beyond this tipping point. Certain areas of the Great Lakes are increasingly experiencing ecosystem breakdown, where intensifying levels of stress from a combination of sources have overwhelmed the natural

processes that normally stabilize and buffer the system from permanent change." (emphasis added)

The scientists' report was a surprise because to many, the Great Lakes and their tributaries seem to be improving. Due to fundamental policy shifts like the Clean Water Act, massive government investment in better sewers, and responsible private initiatives, rivers no longer catch fire; Lake Erie has come back from the dead; the water often looks clearer; and many pollutant indicators have improved. But such observations only scratch the surface, and the scientists looked much deeper to find an ecosystem in crisis. They have documented:

- The destruction of the foundation of the Great Lakes food web in many of the Great Lakes. Populations of the basic food group for most fish, a freshwater shrimp called Diporeia, have declined from over 10,000 per square meter of lake bottom to virtually zero over vast stretches of Lake Michigan and the other Great Lakes. The scientists cannot be sure, but they believe the decline is linked to the infestation of the Great Lakes by an invasive species, the zebra mussel, which colonizes the lakebeds in thick mats of shells that extend for acres and acres and leaves the surrounding lakebeds barren of life. A chart illustrating this decline is attached to this testimony as Appendix C. NWF has produced a report describing the devastating impact that invasive species have had on the Great Lakes in a report titled Ecosystem Shock that can be found on the Healing Our Waters Coalition website at *www.restorethelakes.org/reports.html.*
- Lake Erie's so-called "dead zone," an area deprived of oxygen, has reappeared in central Lake Erie. Accompanying this anoxic zone is the return elsewhere in the lake of blue-green (toxic) algae blooms, and episodic die-offs of fish and fish-eating birds from avian botulism. Scientists are seeing similar eutrophication problems in Lake Huron's Saginaw Bay and Lake Michigan's Green Bay.
- Many fish populations are showing signs of stress and decline in the Great Lakes. Scientists have found "widespread decline in growth, condition and numbers of yellow perch, lake whitefish, and other valuable fish species in Lake Michigan and portions of Lake Huron."

The scientists concluded that these and other large-scale ecosystem changes result from the loss of the Great Lakes' capacity to buffer themselves against sources of stress—essentially, damage to the Great Lakes immune system. Much of the buffering capacity for the Great Lakes comes from healthy near-shore communities and tributaries. As these areas are damaged by pollution, hydrologic modifications, invasive species, and shoreline development, they lose their capacity to buffer the Great Lakes. Without that buffering capacity, each new stress—whether it be an invasive species or additional pollution—can set off a cascade of damage to the ecosystem that occurs rapidly and unexpectedly. In the scientists' words,

- "In the Great Lakes, nonlinear changes are no longer a future threat—these types of changes are taking place now. While in some areas some indicators of ecosystem health have continued to improve over the past decade, other large areas of the lakes are undergoing rapid changes where combinations of effects of old and new stresses are interacting synergistically to trigger a chain reaction process of ecosystem degradation. The rapidness of this chain-reaction process, seen over the past 5 to 15 years and involving sudden and unpredictable changes, is unique in Great Lakes recorded history." (emphasis added)

As alarming as the scientists' diagnosis is, they have also identified concrete and achievable remedies:

restore Great Lakes buffering capacity (their immune system) by restoring the ecological functions of their near-shore communities and tributaries. On the ground, this means restoring coastal and riverine wetlands, making shorelines and watercourses more natural, and improving tributary health;

remediate the practices that cause the sources of stress. This means reducing pollution and new damaging habitat alterations and stopping the entry of new invasive species;

protect the functioning parts of the ecosystem from new impairments, particularly through sustainable development practices; and

measure the health and health trends of the Great Lakes to evaluate the effectiveness of the measures taken above.

As discussed below, these remedies are reflected in the Great Lakes Regional Collaboration's Strategy to Restore and Protect the Great Lakes.

Given the national significance of the Great Lakes and their rapidly accelerating deterioration, the Great Lakes Regional Collaboration ("GLRC") recommendations come just in time. The Collaboration is truly an historic event in two important respects. First, it is the first time that all levels of government and virtually all private stakeholders have come together to draft and support a single Great Lakes restoration plan, the "Great Lakes Regional Collaboration Strategy." Over 1,500 people participated in the drafting of the final plan, including cities, counties, State agencies, tribal representatives, Federal agencies, congressional staff, businesses, conservation organizations, university scientists, and concerned citizens. Many of the scientists who drafted the "Prescription" report actively participated in the Collaboration, helping to shape it to reflect the diagnosis and solutions in the report. Healing Our Waters Coalition members also were highly engaged, as were members of industry and local government.

The resulting Strategy sets a second precedent: it is the most comprehensive Great Lakes restoration and protection plan in history. It documents virtually all of the problems besetting the Great Lakes; it recommends concrete solutions; it identifies programs to implement those solutions; and it recommends the funding needed for those programs to succeed.

The Healing Our Waters Coalition is fully supportive of the Strategy's recommendations. Because it is the product of a large and arduous negotiation process, it certainly is not perfect; but it is by far the best blueprint the Great Lakes have ever had for protection and restoration. And if it is implemented quickly, it will give the lakes a fighting chance to reverse the "chain reaction of degradation" the scientists have identified and return to health.

The Strategy's recommendations are a mix of improvements to existing programs, sweeping new program recommendations, and substantial new investments of Federal, State, tribal and private resources. This mix is appropriate. Some efficiencies and progress can be gained by improving existing programs and improving coordination among them. So, for example, modifying the Great Lakes Legacy Act will improve delivery of funds to clean up Areas of Concern. But simply improving existing programs is not nearly enough; even if the Legacy Act cleanups are made more efficient, they are woefully underfunded—only $29 million this year, when the AOC cleanup costs will exceed $2.5 billion. For that reason, the GLRC Strategy did not only recommend modifying the Legacy Act program; it also recommended substantial funding of $150 million annually.

Likewise, improvements to existing programs are not enough when there is no effective program to begin with. The most glaring example is invasive species. Scientists generally agree that invasive species are the worst problem facing the Great Lakes. Over 185 invasive species have been discovered to date, and they have wreaked havoc on the Great Lakes, its fisheries, and its businesses. The GLRC estimates that the economic costs of invasive species to the Great Lakes are $5 billion per year. The most common pathway of invasive species into the lakes is via the discharge of ballast water from ocean-going ships. Yet there is no effective program for stopping those discharges; the Coast Guard has acknowledged in the Federal register that its current programs to control those discharges are ineffective. To address invasive species, then, the GLRC recommends a bold new program: new legislation and regulations to set and implement ballast water discharge standards that reflect the best technology available and protect the Great Lakes.

For the purposes of today's testimony, I will focus on the larger programmatic and funding recommendations of the GLRC Strategy; but I want to emphasize that there are also important recommendations to improve existing programs that I will not discuss today. The major changes recommended by the Strategy and fully endorsed by the Healing Our Waters Coalition include:

• Create a net increase of 550,000 acres of wetlands and 335,000 acres of buffer strips by 2010. This recommendation, made by both the habitat and nonpoint source strategy teams, is critically important to restoring the buffering capacity of the Great Lakes; it aligns perfectly with the scientists' "Prescription" report. Losses of wetlands and riparian buffers have impaired coastal and tributary health; they have magnified pollution pathways; and they have disturbed native species, facilitating the establishment of invasives. In addition to their well-known filtering capacity for chemical pollutants, wetlands can actually repel invasive species and reduce an outbreak after they have become established. More fundamentally, they stabilize aquatic systems, making them more resilient to stress. Implementing this recommendation will not only require new Federal and State funding; it will also require changes to the way that agencies make decisions in selecting the wetlands to be restored.

• Eliminate the discharge of untreated or inadequately treated sewage into the Great Lakes system through new funding and better enforcement. This recommendation would provide $13.75 billion of Federal, State and local dollars over 5 years to upgrade sewage treatment facilities to stop untreated sewage from damaging the Great Lakes and their tributaries. These funds are critical both to protect the health of summer beach-goers and to reduce one of the largest sources of stress to the near-shore coastal communities so important to the Great Lakes immune system. The Federal share (in a 55/45 match) would be $7.355 billion.

• Stop the introduction of new invasive species through new laws and regulations (described above) and by erecting barriers in canals and waterways to repel invaders. Also, determine the feasibility of separating the Great Lakes and Mississippi River systems. As invasive species are the worst source of stress to the Great Lakes ecosystem, implementing these recommendations are essential; the Great Lakes cannot recover without them.

• Provide adequate funding—$150 million per year—for cleaning up Areas of Concern under the Legacy Act (see above). These sources of toxic pollution permeate the sediments in regions that historically were some of the most biologically productive. These toxic sediments not only add new sources of stress to the system; they also prevent the lake bottom from performing its natural buffering functions. They are a major factor in the accelerating pattern of Great Lakes ecosystem breakdown, and their remediation is essential to restoring the Great Lakes immune system.

• Double the Federal research budget for the Great Lakes. Research funds at the State and Federal level have declined in recent years, just as the ecosystem is exhibiting new and complex responses to accumulating sources of stress. To ensure that we are taking the right steps and spending our Federal and State investments wisely, we need to be able to measure impacts on the ground and in the water. Significant increases in research dollars are vital to making sure our investments are being used efficiently. A substantial portion of those increases need to be directed at academic research institutions; it is essential to bring together all of the brightest minds and innovations that academia brings to bear to complement the efforts in Federal laboratories.

NEXT STEPS

The Great Lakes Regional Collaboration Strategy expresses the consensus that these and other significant new actions, policy and funding, are urgent and essential for the Great Lakes. Delay may lead to massive and rapid deterioration of the lakes and cost far more than the actions recommended in the Strategy. If we wait, the costs will skyrocket. However, if we make the necessary investments now, we will see excellent returns, both ecological and economic.

To implement the Strategy's recommendations in a timely way, several steps need to be taken, preferably concurrently. They are:

1. A Great Lakes Restoration bill needs to be drafted and enacted to implement major portions of the Strategy. The bill will need to incorporate modifications to existing laws, such as the Great Lakes Legacy Act (toxic cleanup) and the Lacey Act (importation of invasive species). It may need to reauthorize existing programs targeted at restoring wildlife habitat and wetlands, such as the Great Lakes Fish and Wildlife Restoration Act. It will also have new programs, such as a $40 million annual program to support physical restoration of Great Lakes tributaries. Finally, it will need to have much higher authorization levels for existing programs, such as $150 million annually for the Legacy Act, $1.35 billion annually to enable cities to upgrade their water infrastructure to stop raw sewage from contaminating our beaches, and additional funds for wetlands restoration programs. The Great Lakes Restoration bill introduced by Senators DeWine, Levine and Voinovich last year is a good starting point, but needs to be revised to take into account the GLRC recommendations.

2. Key policy measures can and should move independently. For example, rapid enactment of the National Aquatic Invasive Species Act or equivalent legislation is absolutely critical in addressing invasive species, which scientists agree is the worst problem plaguing the Great Lakes. Attached to this testimony as Appendix D is a letter the Healing Our Waters Coalition has sent to Senator Voinovich on this matter.

3. In the short term, next year's appropriations should implement the GLRC Strategy's recommendations. The Healing Our Waters Coalition has culled the top budget recommendations from the Strategy, consulted with the Great Lakes Mayors and the Great Lakes Governors, and identified fiscal year 07 budget priorities. Those are attached as Appendix E.

4. One of the fiscal year 07 priorities deserves special mention: funding to make permanent and operate the electric barrier in the Chicago Sanitary Ship Canal. This barrier, now temporary and lacking funds for operations, is the only obstacle between a voracious invasive species, the Big-Headed Asian Carp, and the Great Lakes. These carp eat every aquatic organism in their path. Once into Lake Michigan, they will out-compete all native fish and turn the Great Lakes into a giant carp farm. Funding for the barrier is absolutely critical to saving the Great Lakes, their fisheries, and their economy.

CONCLUSION

The Great Lakes Regional Collaboration's Strategy to Restore and Protect the Great Lakes provides a first-ever comprehensive blueprint to return the Great Lakes to health, and just in time. According to leadings scientists, the lakes are suffering ecosystem breakdown, a chain reaction of degradation that could become irreversible if action is not taken quickly. This deterioration, if unchecked, will have massive ecological and economic consequences for the Midwest and the Nation.

As essential and useful as the Collaboration's Strategy is, it is only a first step. Without implementation, it will simply become yet another Great Lakes plan, sitting on a shelf and gathering dust.

We commend you, Mr. Chairman, and the members of this committee for your leadership in scheduling this hearing and maintain the momentum for Great Lakes restoration. We particularly would like to thank Senator Voinovich for his longstanding efforts as a champion of the Great Lakes.

This committee is uniquely situated to transform the Collaboration's Strategy into concrete action. We encourage you to exercise your outstanding leadership to ensure that the Strategy's recommendations are implemented.

The Great Lakes are the natural infrastructure of the Midwest, the industrial center of the Nation. Just as bridges and roads crumble without adequate investment, so are the Great Lakes deteriorating. The longer the wait, the more expensive the investment will be and the more we will lose because of the delay. On the other hand, if we act now, the Great Lakes will return to health, bringing with them jobs, recreation, tax revenues, wildlife, and the future on an entire region.

HEALING OUR WATERS®-GREAT LAKES COALITION

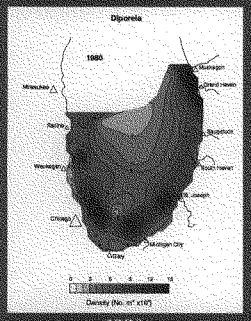
Alliance for the Great Lakes
American Rivers
Audubon
Audubon Minnesota
Audubon of New York
Audubon Ohio
Audubon Pennsylvania
Biodiversity Project
Brookfield Zoo
Center for Environmental Information
Citizens Campaign for the Environment
Clean Water Action
Clean Wisconsin
Corps Reform Network
County Executives of America
Ducks Unlimited
Wight Lydell Chapter and the Michigan Division of the Izaak Walton League of America
Ecology Center
Environmental Advocates of New York
Environmental Association for Great Lakes Education
Friends of Milwaukee's Rivers
Great Lakes Aquatic Habitat Network and Fund
Great Lakes Boating Federation
Great Lakes United
Illinois Council for Trout Unlimited
Illinois PIRG (ILPIRG)
Indiana PIRG (INPIRG)
Institute for Agriculture and Trade Policy
Izaak Walton League of America
John Ball Zoological Gardens
John G. Shedd Aquarium
Kalamazoo River Protection Association
Lake Erie Coastal Ohio
Lake Erie Region Conservancy
Lake Michigan Interleague Organization
Lake Superior Alliance
League of Ohio Sportsmen
League of Women Voters of Michigan
League of Women Voters of Ohio
League of Women Voters of Wisconsin
Maumee Bay Association
Michigan Council of Trout Unlimited
Michigan Environmental Council
Michigan Land Use Institute
Michigan League of Conservation Voters
Michigan United Conservation Clubs
Michigan Wildlife Conservancy
Minnesota Center for Environmental Advocacy
Minnesota Conservation Federation
Minnesota Council of Trout Unlimited
Minnesota Environmental Partnership
National Parks Conservation Association
National Wildlife Federation
Nature Quebec
New York Rivers United
New York State Zoo
Ohio Environmental Council
Ohio League of Conservation Voters
Ohio PIRG (OPIRG)
Pennsylvania Environment
PIRG in Michigan (PIRGIM)
Prairie Rivers Network
River Alliance of Wisconsin
Save the Dunes
Save the River
Sierra Club- Great Lakes Program
The Nature Conservancy
Tip of the Mitt Watershed Council
Toronto Zoo
U.S. PIRG
Union of Concerned Scientists
University of Michigan SNRE
Watershed Center Grand Traverse Bay
Western Lake Erie Waterkeeper
Winous Point Marsh Conservancy
Wisconsin Association of Lakes
Wisconsin League of Conservation Voters
Wisconsin Trout Unlimited
Wisconsin Wildlife Federation

Changes in abundance of Diporeia in sediments of southern Lake Michigan from 1980 – 2000. By 1998, large sections of nearshore waters in the southern and southeastern portion of the lake were supporting few if any numbers of the shrimp-like organism. (Graphic from T. Nalepa, Great Lakes Environmental Research Laboratory, NOAA)

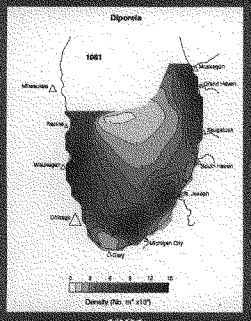
Diporeia in Lake Michigan: Examples of Declines in these Lakebed Food Resources

Diporeia numbers in southern Lake Michigan dropped slightly during the 1980's, but decreased much more rapidly beginning in the early 1990's following the introduction of zebra mussels to the lake in 1989.[89]

- The density of *Diporeia* at the Grand Haven, MI station dropped from 10,000 per square meter in the 1980s and early 1990s to 110 per square meter in 1999 after zebra mussels were discovered in the area in 1992 – a 99 percent decline.
- The mean density of *Diporeia* off Muskegon, MI declined from 5,569 per square meter to 1,422 per square meter.
- By 1998, *Diporeia* declined in southern Lake Michigan and were rare or absent off Grand Haven, Saugatuck, South Haven, and St. Joseph out to depths of 70 meters.[90]



1980



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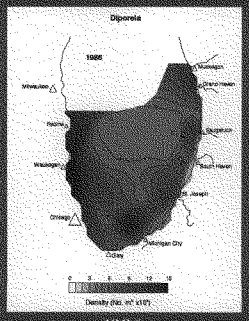
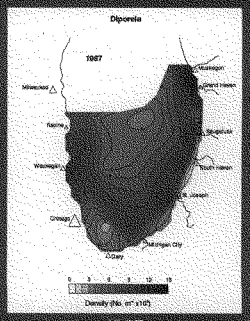


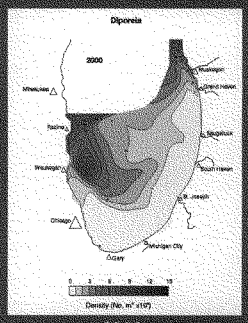
1986



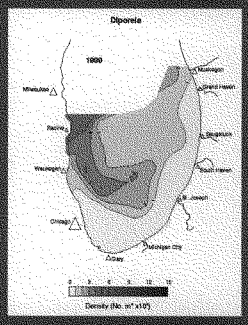
1987

Similar changes in *Diporeia* populations have been observed in sampling of a number of sites in Lake Ontario:

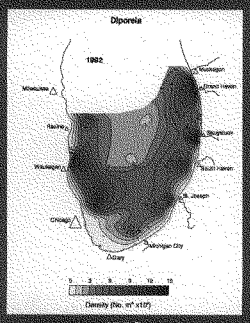
- Mean densities of *Diporeia* were at least 130 times greater in 1964 and 1972 than in 1997 after zebra mussel establishment.
- At locations where *Diporeia* was abundant, densities dropped to 15% of their former levels in three years (averaged 6,363 per square meter in 1994 and only 954 per square meter in 1997).
- The percentage of stations where no or very few *Diporeia* were found more than doubled from 40% in 1994 to 84% in 1997.
- A zone of very low *Diporeia* density (< 4 individuals per square meter) extends as far as 16 miles (26 kilometers) offshore and to depths of 656 feet (200 meters) over 40% of the total surface area of Lake Ontario soft sediments in 1997.



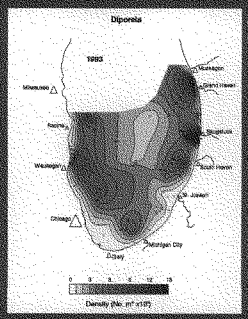
2000



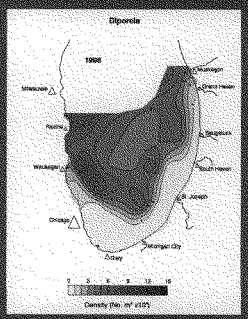
1999



1992



1993



1998

Prescription for Great Lakes Ecosystem Protection and Restoration

(Avoiding the Tipping Point of Irreversible Changes)

December 2005

Jack Bails, Vice President, Public Sector Consultants

Alfred Beeton, Ph.D., retired Director of Great Lakes Environmental Laboratory, Adjunct Professor, University of Michigan

Jonathan Bulkley, Ph.D., Professor, University of Michigan

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Note: Affiliations are listed for identification purposes only.

Publication of this paper was made possible in part by support from the Wege Foundation and the Joyce Foundation

OVERVIEW

There is widespread agreement that the Great Lakes presently are exhibiting symptoms of extreme stress from a combination of sources that include toxic contaminants, invasive species, nutrient loading, shoreline and upland land use changes, and hydrologic modifications. Many of these sources of stress and others have been impacting the lakes for over a century. These adverse impacts have appeared gradually over time, often in nearshore areas, in the shallower portions of the system, and in specific fish populations. Factors such as the size of the lakes, the time delay between the introduction of stress and subsequent impacts, the temporary recovery of some portions of the ecosystem, and failure to understand the ecosystem-level disruptions caused by the combination of multiple stresses have led to the false assumption that the Great Lakes ecosystem is healthy and resilient.

Because it has taken the Great Lakes four centuries of exposure to these human-induced stresses to get to this point, some argue we have decades to control these and other sources of stress and promote the lakes' recovery.[1] From this perspective, protecting the Great Lakes is not particularly urgent and action can wait until we conduct more studies, while taking small corrective measures when the opportunity or need arises. However, if not addressed with great urgency, the Great Lakes system may experience further – and potentially irreversible – damage.

In large areas of the lakes, historical sources of stress have combined with new ones to reach a tipping point, the point at which ecosystem-level changes occur rapidly and unexpectedly, confounding the traditional relationships between sources of stress and the expected ecosystem response. There is compelling evidence that in many parts of the Great Lakes we are at or beyond this tipping point. Certain areas of the Great Lakes are increasingly experiencing ecosystem breakdown, where intensifying levels of stress from a combination of sources have overwhelmed the natural processes that normally stabilize and buffer the system from permanent change.[2]

Although the specific episodes of ecosystem breakdown have been unpredictable and alarming, few Great Lakes researchers are surprised by these occurrences. A number of papers were published in the 1980s describing stresses in various areas of the Great Lakes, including Lake Erie and shallow embayments in lakes Michigan, Huron, and Ontario. These papers described the symptoms of the Great Lakes ecosystem under distress, and laid the foundation for a conceptual ecological framework for understanding the changes that were occurring at that time. Rapport et al. (1985) discussed ecosystem self-regulating mechanisms (such as responses to invasive species) and the process by which stresses can give rise to early warnings, coping mechanisms, and ultimately lead to ecosystem breakdown if the overall stress is sufficiently prolonged and/or intense. The ecosystem adaptation syndrome discussed in the paper can be used to help formulate a systematic ecosystem approach to environmental management of the Great Lakes. This ecosystem breakdown concept helps explain the scope,

[1] Great Lakes Interagency Task Force, Report to the President on the Implementation of the Great Lakes Executive Order, undated, available at: http://www.epa.gov/glnpo/collaboration/final_rttp_10282005.pdf

[2] This is analogous to discussions of resilience and catastrophic change in ecosystems as presented in Scheffer et al. (2001), whereby assuming alternative stable states are available, sufficient perturbation in any ecosystem can shift it to an alternative (and potentially "unwanted") stable state.

intensity, and speed of the ecosystem changes that have occurred in the Great Lakes since the 1980s.

Examples of ecosystem breakdown or major changes in the lakes include: (1) persistence of the anoxic/hypoxic zone in the central basin of Lake Erie and other stresses in the eastern and western basins; (2) continued symptoms of impairment (including eutrophication) in Saginaw Bay and Green Bay; (3) well-documented rapid disappearance of the once abundant amphipods in the genus *Diporeia* in sediments of large areas of all the lakes (except for Lake Superior), and concomitant food web disruptions; (4) recent declines in growth, condition and numbers of lake whitefish in Lake Michigan and portions of Lake Huron; and (5) elimination of the macrophyte (i.e. rooted plant) community and simplification of the benthic food web, in Sandusky Bay on Lake Erie and Cootes Paradise in Hamilton Harbour on Lake Ontario, due to sediment and other pollutant loads.

The major cause of ecosystem breakdown is the severe damage that has been done to the Great Lakes' self-regulating mechanisms. In the past, healthy nearshore communities and tributaries helped reduce the impact of many stresses on or entering the lakes. Over time, the combined effects of a whole suite of stresses from a variety of human-induced sources have overwhelmed the ecosystem's self-regulating mechanisms. This diagnosis suggests that it is appropriate and necessary to address multiple sources of stress in order to reverse the trend toward widespread ecosystem breakdown. The following is a list of Great Lakes management objectives based on this diagnosis.

- *Restore*

Restore critical elements of the *ecosystem's self-regulating mechanisms*. To the extent possible, reestablish natural attributes of critical nearshore and tributary communities so they can once again perform their stabilizing function. Where full restoration of natural attributes is not possible, improve desirable aspects through *enhancement* of important functions.[3]

- *Remediate*

Remediate abusive practices that create *sources of stress*. Reduce or eliminate physical habitat alterations, pollution loadings, pathways for invasive species, and other stressors or their vectors into the lakes.

- *Protect*

Protect the functioning portions of the ecosystem from *impairment*. Preserve those portions of the ecosystems that now are healthy, and those that can be restored or enhanced, through sustainable development practices within the Great Lakes basin.

- *Measure*

Building on existing efforts, measure ecosystem health through a set of agreed-upon integrative indicators that can serve to assess current conditions and monitor the progress of restoring the lakes.

[3] Establishment of restoration goals obviously needs to acknowledge ecological constraints (e.g., the presence of numerous invasive species – including introduced fish – that are currently important components of food webs) as well as consider other human use objectives (e.g., maintenance of sport fisheries that include introduced species) (see, for example, discussions in Kitchell et al., 2000; Mills et al., 2003; Sproule-Jones, 2003).

The conceptual model here indicates the importance of immediate and sustained action. It advocates using the principles of ecosystem-based management to restore and protect the Great Lakes. Without such action, the lakes could potentially suffer irreversible and catastrophic damage.

SYMPTOMS

Many of the changes the Great Lakes have experienced in response to sources of stress have been documented for decades. Examples of symptoms and sources of stresses to the lakes include:

- Extirpation or major declines in important native species (such as lake trout and deepwater ciscoes) due to overfishing and effects from aquatic invasive species (such as sea lamprey predation on lake trout, and competition with deepwater ciscoes by introduced alewives and rainbow smelt);
- Widespread reproductive failures of keystone, heritage, and other (both native and introduced) fish species, including lake trout, sturgeon, lake herring, coaster brook trout, and Atlantic and Pacific salmon;
- Fouling of coastlines, resulting in beach closings and loss of habitat for fish and waterfowl;
- Toxic contamination of fish, which threatens the health of people, wildlife, and some fish species themselves, and results in fish consumption advisories throughout the Great Lakes and inland lakes and rivers;
- Loss of coastal wetlands, including over 90% of the presettlement wetlands along the Lake Huron/Lake Erie corridor;
- More recent introductions of aquatic invasive species (e.g., zebra and quagga mussels, round gobies and predatory zooplankton such as *Bythotrephes cederstroemi* and *Cercopagis pengoi* (two species of water fleas)) leading to declines in valued/important native aquatic species (including certain plankton, unionid clams and certain native fish species);
- Decreased populations of benthic organisms in many locations, causing decreased health in lake whitefish and with the potential to impact other species; and
- General water quality degradation, associated algal blooms, Type E botulism in fish and waterfowl, and contamination of drinking water (e.g., Johnson et al., 1998; Beeton et al., 1999; IJC, 2000; IJC, 2002; IJC, 2004; Whelan and Johnson, 2004).[4]

[4] In some cases, policies designed to address these stresses have been effective. Most notably, the passage in the United States of the Clean Water Act in 1972 and subsequent amendments initiated the National Pollutant Discharge Elimination System for point sources and resulted in billions of dollars in investments by federal, state, and local governments to upgrade, improve, and extend wastewater collection and treatment systems directly tributary to the Great Lakes; similar scale investments were made in Canada. The ban on the use and manufacturing of certain toxic chemicals, and strict protections put on others, has helped allow key indicator species (eagles, herring gulls) to return to health. However, even with substantial investments over the past three decades, wastewater treatment plants and sewer systems are in need of substantial new capital expenditures for major repairs, upgrades and, in some cases, replacement, and it is clear that local funding alone will not be adequate to the task. In addition, though a subject of research and policy focus for a number of years, nonpoint source pollution – including urban runoff, agricultural runoff, air deposition, and contaminated sediments – continues to be a significant contributor of pollutants to Great Lakes waters.

Historically, these and other symptoms were attributed to six major anthropogenic or human-induced sources of stress to the ecosystems in each lake.[5] The symptoms may appear stepwise like a chain reaction or self-organize in a complex, ecologically degraded manner. Listed in no particular order are those anthropogenic sources of stress: (1) **overfishing** (i.e., extracting larger quantities of fish than the system can sustain naturally); (2) **nutrient loading** (i.e., addition of phosphorus and nitrogen in excess of natural levels, usually via human waste and urban and agricultural runoff); (3) the release of **toxic chemicals** (e.g., mercury, polychlorinated biphenyls (PCBs) and other chlorinated hydrocarbons), including many that are both persistent and bioaccumulative;[6] (4) increased sediment loading as well as other sources of stress associated with **land use practices** (e.g., physical changes including alteration of vegetative land cover, wetland filling, modification of shorelines); (5) introduction of invasive (nonnative) **exotic plant and animal species** (e.g., purple loosestrife, sea lamprey, and zebra mussel); and (6) **hydrologic alterations** in tributary and connecting waterways, diversion and/or alteration of flows through the construction of dams, channels, and canals, alteration of natural drainage patterns (e.g., leading to increased surface water runoff and stream flows in urban areas with increased imperviousness).

Many of the symptoms of stress on the Great Lakes are attributable to a combination of these six sources of stress. Fouling of coastlines and near-shore areas arises from sewage overflows and contaminated runoff. Historically, valued species of fish declined in number or disappeared as a result of overfishing and, to varying degrees, invasive species, lost habitat connectivity, and toxic chemicals. Presently, invasive species and concomitant food web changes as well as lost connectivity of tributary spawning habitat play a larger role in affecting fish populations. Toxic chemical contamination in fish, which also threatens the health of humans and fish-consuming wildlife, is a direct result of historical and current toxic chemical releases. The loss of coastal wetlands stems from changes in land use practices and hydrologic alterations. Changes in water quality are caused directly by toxic chemical, nutrient, microbial and sediment pollution, as well as through actions of some invasive species (e.g., zebra mussels). Invasive species are the most likely principal source of food web disruptions now occurring in the Great Lakes, and are implicated in reproductive failures of some fish species (e.g., walleyes, lake trout, yellow perch, and lake herring) (McDonald et al., 1998; Fielder and Thomas, 2005).[7]

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[5] Although we often speak of a "Great Lakes ecosystem," in most cases each lake basin has its own ecosystem, further divided into sub-basin ecosystems.

[6] In addition to chemicals that have been of longstanding concern in the Great Lakes, increasing attention is being directed at chemicals of emerging concern, including those found in products such as pharmaceuticals, personal care products, and flame retardants. Some of these and other chemicals may act as endocrine disruptors or otherwise alter regulatory systems in biota, and potentially add to the stress caused by toxic chemicals of principal focus in the region.

[7] One example of reproductive effects on salmonids involves the action of the enzyme thiaminase, which transforms the essential vitamin thiamine. In a recent study, lake trout fed diets with substantial amounts of thiaminase (either in bacterial form or with alewives (an introduced species with naturally elevated levels of the enzyme)) produce eggs more susceptible to embryonic early mortality syndrome (Honeyfield et al., 2005).

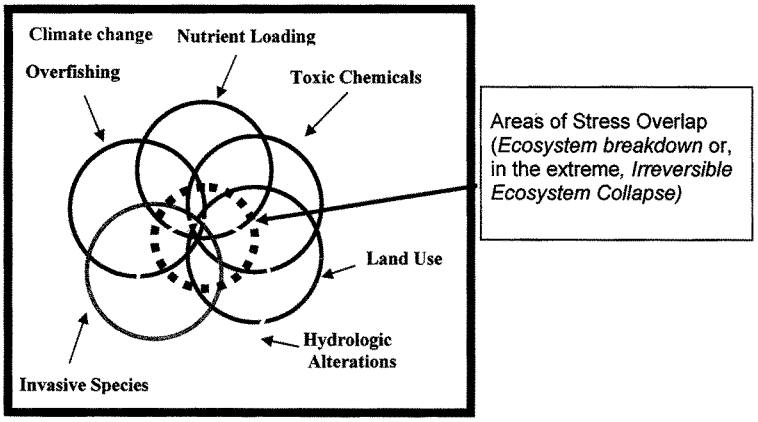
It should be noted that superimposed on these primary stresses are the broader, large-scale changes in global and regional climate. A recent analysis of the potential global warming and regional climate change impacts to the Great Lakes region included declining lake levels and the duration of winter ice, jeopardizing reproduction of some fisheries, and general lake warming that could negatively impact coldwater fish species, favor invasions of warm water nonnative species, and expand the duration of summer stratification and increase the potential for hypoxia ("dead zones") (Kling et al., 2003). These findings were generally consistent with earlier predictions for the Great Lakes in a scenario with a doubling of atmospheric carbon dioxide levels, although the researchers emphasized that the many complex interactions could lead to varied responses in individual ecosystems (e.g., thermal habitat changes in deep stratified lakes vs. shallow lakes and streams) (Magnuson et al., 1997). In addition to these potential compounding factors in the lakes proper, earlier ice breakup and earlier peaks in spring runoff will change the timing of stream flows, while increases in heavy rainstorms may cause more frequent flooding with potential increases in erosion, and additional water pollution from nutrients, pesticides, and other contaminants. While it is difficult to know how these changes will interact with the other six classes of stress identified above, there is little doubt that global warming will add yet another source of stress to the already perturbed Great Lakes ecosystem.

DIAGNOSING THE DISEASE

The Great Lakes ecosystem and the major human-induced sources of stress on it can be portrayed as a series of overlapping circles in a Venn Diagram, as shown in Figure 1 on the following page.[8] For areas where stresses act singly or jointly but not at intense levels, an ecosystem may change adaptively to an unhealthy state of diminished vigor and unpleasant aesthetics but not suffer major transformation to a disorganized critical state. Such a contrast could be analogous to a person feeling sick and redirecting vital efforts to recover at home rather than being taken to a crisis center for surgery or other intensive care. In an ecosystem in which only one stress acts intensely, positive (or reinforcing) or synergistic feedback loops can emerge, leading to a runaway or catastrophic breakdown process. However, such feedback loops are more likely to occur as the adverse effects of a number of stresses interact. The probability of disastrous ecosystemic breakdown appears to increase with the number of stresses acting on and interacting in the ecosystem. Thus, in this conceptual model, the probability of breakdown is likely to be highest at the center of the Venn Diagram where all types of stress act and interact to varying degrees. The prevention of this type of ecosystem breakdown should be the focus of attention in any restoration and protection efforts.

[8] The locations of stresses on the diagram is somewhat arbitrary, as the model is limited to working with stresses that are represented in two dimensions. It is possible that two or more stresses might interact in stronger ways (and others less coherently) that can be represented in the diagram.

Figure 1.



The magnitude (intensity), shape, and degree of overlap of the stresses have varied over time and space. For example, **overfishing** began in the late 1800s and continued into the 20th Century, while **invasive species** had significantly effected the ecosystem by the middle of the 20th Century. Other stresses have had significant effects more locally, such as **nutrient loading** in Green Bay, Saginaw Bay, and the western and central basins of Lake Erie, and **toxic chemicals** in the basin's industrial complexes such as along the Niagara, Detroit and Fox rivers (although due in part to diffuse loadings, many contaminants long ago become more widespread throughout the lakes themselves). In order to address these areas of overlap, there remains the need to better understand the salient features of these areas.

Conceptual Understanding of Ecosystem Stress Adaptation

The nearshore areas are important in the ecosystemic self-organization of the Great Lakes. Before the significant impact of humans (i.e., following European settlement), the nearshore areas were in equilibrium with surrounding areas. There was a healthy abundance and diversity of organisms interacting to various degrees with surrounding areas (from wetlands to offshore), and loads of nutrients and other constituents from land could be assimilated and/or transferred between communities without major disruptions to the functioning ecosystem. With development and industrialization in the Great Lakes, land use changes, increased pollution, and other factors have increased stress on these nearshore areas.

As the types and intensity of stress increased, two things happened. First, inflowing nutrients were shunted to the open waters of nearshore areas where photosynthetic energy fixation then erupted as plankton blooms. The blooms resulted in the loss of many valued, native species of nearshore communities and an increase in other species, native and nonnative, that favor open waters. Second, the entire ecosystem, including community abundance and composition, became unstable and began to undergo wider and more frequent fluctuations. Increased loadings of sediments from watershed runoff, toxic chemical inputs, oxygen depletion (following increased nutrient loads), hydrological alterations and other sources of stress

created a hostile environment to bottom dwelling, pollution-sensitive species and to the eggs of most Great Lakes fishes (Rapport et al., 1985; Steedman and Regier, 1987). Some of these changes were concomitant with or followed upon earlier changes to the upper portions of the food web due to a combination of introduction of aquatic invasive species (such as the sea lamprey, rainbow smelt and alewives) and overfishing, leading to extirpation or significant depletions of open water species such as lake trout and deepwater ciscoes (Eshenroder and Burnham-Curtis, 1999).

More recently, the invasion of zebra mussels in Lake St. Clair in 1988 and later arrival of quagga mussels have altered this nutrient flow dynamic in the Great Lakes yet again. Extensive colonization by zebra mussels in nearshore areas of the lower lakes has resulted in the reduction of nutrient and energy supplies to the open waters (Hecky et al. 2004). The extreme filtering capacities of zebra mussels for plankton has transferred energy from the water column to the nearshore benthic areas, and diminished the transport of nutrients via currents to the deeper waters. Also, quagga mussels colonize deeper waters and out-compete other organisms for food resources directly. The increased nearshore retention of nutrients along with clearer water has led to an increase in undesirable species of algae. Organic material filtered by mussels is transformed into biodeposits (pseudofeces and feces) that while serving in part as a food source for some organisms, are not utilized as a food source by many other benthic organisms (see below). In addition, the zebra mussels themselves are undesirable prey for most native Great Lakes fish species, but are readily consumed by invasive round gobies. The introduction and spread of zebra and quagga mussels has not only led to declines in native mussels (Nalepa et al., 1996) and other benthic species (see, for example, Nalepa et al., 1998; Dermott, 2001; Lozano et al., 2001), but has also facilitated the spread of other invasive species (Ricciardi, 2001).

With sufficient cumulative stress (including habitat loss, nutrient loadings, oxygen depletion, and invasive species), the capability of once healthy, resilient, and diverse coastal communities to buffer against natural and human perturbations can be overwhelmed. In essence, the health-sustaining system of the Great Lakes is seriously weakened. Once the resilient capabilities are exceeded the ecosystem organization abruptly and catastrophically changes, resulting in ecosystem breakdown. Under extreme circumstances where the suite of stresses become severely intense, the ecosystem adaptive responses in some cases move into another phase dominated by species that can tolerate and benefit from those sources of stress. The presence of surface scum, mats of fungi, strands of filamentous algae, and surface blooms of toxin-producing algae create this new phase in the water column. This surface association has appeared seasonally in certain bays and in the shallow waters of the Great Lakes, but has had adverse affects on both the nearshore and open water communities.

Scientists throughout the world are documenting the actual and expected damage that the loss of such ecosystem resiliency can cause. In March, 2005, the United Nations issued a final draft of a report endorsed by 1,200 of the world's leading scientists called the Millennium Ecosystem Assessment Synthesis Report (United Nations, 2005). One of the report's conclusions follows:

> **There is *established but incomplete* evidence that changes being made in ecosystems are increasing the likelihood of nonlinear changes in ecosystems (including accelerating, abrupt, and potentially irreversible changes), with**

> **important consequences for human well-being.** Changes in ecosystems generally take place gradually. Some changes are nonlinear, however: once a threshold is crossed, the system changes to a very different state. And these nonlinear changes are sometimes abrupt; they can also be large in magnitude and difficult, expensive, or impossible to reverse. (Emphasis in original, endnote omitted) (United Nations 2005)

The Millennium Ecosystem Assessment Synthesis Report conclusions are repeated in a "Scientific Consensus Statement for Marine Ecosystem-Based Management" recently adopted by over 200 scientists (Scientific Consensus 2005). The scientists signing the Consensus Statement on marine environments (as do the scientists endorsing this prescription paper) emphasize the need for a holistic, ecosystem-based management approach, including the dangers of managing only individual sources of stress or specific species:

> **Ecosystems can recover from many kinds of disturbance, but are not infinitely resilient.** There is often a threshold beyond which an altered ecosystem may not return to its previous state. The tipping point for these irreversible changes may be impossible to predict. Thus, increased levels of precaution are prudent as ecosystems are pushed further from pre-existing states. Features that enhance the ability of an ecosystem to resist or recover from disturbance include the full natural complement of species, genetic diversity within species, multiple representative stands (copies) of each habitat type, and lack of degrading stress from other sources. (Emphasis in original.) (Scientific Consensus, 2005)

While the same ecological principles cited for the world's oceans apply to the Great Lakes, the lakes may be less able to cope with stress than typical coastal marine environments. Ecosystems that have evolved in relatively unstable environments, such as those in the intertidal ocean communities that are exposed to frequent tidal movements and that have great diversity of species, are more likely to resist and/or recover from moderate human-induced stress. In contrast, the Great Lakes ecosystem is a relatively young (< 12,000 years), mostly oligotrophic system that has evolved in a relatively stable environment with a more limited number of species. The lakes represent a more closed system than coastal ocean waters, and respond more slowly to contaminant loadings (with longer hydraulic flushing times than coastal areas). Because of these differences, the lakes may be rapidly altered by even moderate stresses such as changes in water quality, system hydrology, or the introduction of invasive species (Rapport and Regier 1995). Thus, action to avoid the tipping point for irreversible ecosystem changes in the Great Lakes may be even more urgent than for coastal marine environments.

Great Lakes Ecosystem Response to Loss of Resiliency

In the Great Lakes, nonlinear changes are no longer a future threat – these types of changes are taking place now. While in some areas some indicators of ecosystem health have continued to improve over the past decade, other large areas in the lakes are undergoing rapid changes where combinations of effects of old and new stresses are interacting synergistically to trigger a chain reaction process of ecosystem degradation. The rapidness of this chain-reaction process, seen over the past five to fifteen years and involving sudden and unpredictable changes, is unique in the Great Lakes' recorded history. Some of the most significant changes observed include the radical food web disruptions occurring in Lakes Michigan, Huron, Erie, and Ontario; the reoccurrence of the anoxic/hypoxic zone in the central basin and other impairments (such as blooms of *Microcystis* cyanobacteria in the

western basin) in Lake Erie; and ongoing problems related to invasive species and other impairments in Lake Ontario. A profile of components of these potentially devastating ecosystem responses follows.

Profiles of Ecosystem Breakdown

Food Web Disruptions

Invasions of aquatic nonnative species in the Great Lakes have been a concern since the mid-twentieth century when sea lamprey, combined with other sources of stress, decimated populations of lake trout in the Upper Great Lakes. Facilitations between a series of invasive introductions have resulted in a synergistic effect leading to significant alterations of critical ecosystem processes in the Great Lakes. For example, reductions in lake trout and other predator species due to sea lamprey predation in Lakes Michigan and Huron paved the way for explosive increases in the populations of other invaders (e.g., alewife and rainbow smelt) which, in turn, competed with and preyed upon native forage species (Holeck et al., 2004).

More recently, researchers have documented a dramatic decline in abundances of the amphipod *Diporeia* in sediments of Lake Michigan. *Diporeia* is a critical component of the food web, important in the diets of many fish species. Historically, it has been the dominant food source for species such as slimy and deepwater sculpin, bloater, and lake whitefish. In the early 1980s average abundances of *Diporeia* in bottom sediments from Lake Michigan were as high as 12,200 individuals/m^2. However, *Diporeia* numbers began declining by the early 1990s, and by 2000 became severely depleted from sediment samples from Lake Michigan in much of the southern and northern portions of the lake, in some cases disappearing altogether (Nalepa et al., 1998; GLERL, 2003).

Populations of other macroinvertebrates have declined significantly in Lake Michigan as well. Oligochaete worms and fingernail clams showed declines in parallel with those of *Diporeia* in nearshore areas from 1980 – 1993 (Madenjian et al., 2002). While researchers have not been able to establish a direct link, they have associated the decline of *Diporeia* with increases in the abundance of the nonnative zebra mussel in Lake Michigan beginning in 1989. *Diporeia* and other benthic organisms depend on diatoms and detritus from other phytoplankton as a primary source of food, the same source of energy that zebra mussels utilize (Nalepa et al., 1998). Recent research indicates that the loss of amphipods is having serious consequences for the fish of Lake Michigan, including whitefish (Pothoven et. al., 2001), sculpin and bloater (Hondorp at al. 2005), and alewife (Madenjian et al., 2002). Evidence also indicates that similar food web disruptions are occurring or have already occurred in Lakes Huron, Erie and Ontario (e.g., Nalepa et al., 2003; Dermott and Kerec, 1997; Lozano et al., 2001).

Lake Erie: Re-emerging Problems and New Threats

For the Lake Erie ecosystem, cautious optimism about restoration was expressed in the early 1990s as the result of reductions in phosphorus loadings, improved dissolved oxygen levels in the bottom waters of the central basin, and increased fish populations (Markarewicz, 1991). However, while improvements have continued by some measures (e.g., increased water clarity, establishment of rooted aquatic plants), other impairments have persisted and/or increased in intensity in recent years. For example, recent data indicate that since the early 1990s springtime phosphorus concentrations have increased, summertime dissolved oxygen

levels in Lake Erie's central basin have decreased, and walleye numbers have begun to decline (IJC, 2004). Lake Erie nutrient loads and cycling, oxygen demand, dissolved oxygen levels and related issues have been the subject of a number of studies in recent decades, and it has been recognized that a combination of factors (including physical factors such as thickness of the bottom water layer, or hypolimnion) can affect deeper water dissolved oxygen levels.[9] Because of the number of factors involved, it is likely that no single factor explains the more recent periods of hypoxia (low oxygen conditions) in the central basin. Factors that could be influencing the persistent development of central basin summertime hypoxia include climate change and altered weather patterns (e.g., changes in temperatures and timing and intensity of storm events), changes in nutrient loadings (in particular from nonpoint sources – some data show increased phosphorus loadings from Ohio tributaries in the past decade), and altered internal cycling of phosphorus in response to the presence of zebra and quagga mussels (e.g., IJC, 2004; U.S. EPA and Environment Canada, 2004).

Avian botulism is another feature of the stress complex in Lake Erie (with cases also observed in Lakes Ontario and Huron), leading to episodic summertime die-offs of fish and fish-eating birds. The die-offs (which have included freshwater drum and birds such as common loons (*Gavia immer*) and red-breasted mergansers (*Mergus serrator*)) are linked to the generation of a neurotoxin produced by the anaerobic bacterium *Clostridium botulinum*. While the mechanisms leading to the outbreaks remain to be confirmed, the botulism toxin has been found in dreissenid mussels and invasive round gobies (a principal predator of zebra mussels), leading to the hypothesis that round gobies are transferring the toxin from zebra mussels to organisms higher in the food web (Domske, 2003; Ricciardi, 2005).

Another stress in Lake Erie is the return of blooms of the blue-green algae (or cyanobacteria) *Microcystis*. In addition to being a low quality food for other aquatic species, these algae can produce the microcystin toxin, which at sufficient levels can be harmful to fish, wildlife and humans. *Microcystis* are selectively expelled during feeding by zebra mussels, and thus zebra mussel colonization appears to be facilitating the re-emergence of these problem blooms (Vanderploeg, 2002). Another problem is the increasing frequency of algal mat development in nearshore areas (in particular in the eastern basin) by the filamentous green alga *Cladophora*. Blooms of this alga, which impair recreation and otherwise detract from beach aesthetic value, are linked to nearshore hypoxia/anoxia (U.S. EPA and Environment Canada, 2004).

Yet another significant potential threat to the ecosystem of Lake Erie and the other lakes is the presence of Asian carp in waters near the lakes. Several of these species have been imported to the southern U.S. to control unwanted organisms found in aquaculture facilities, and in some cases have escaped into the wild. While several individual Asian carp have been caught in Lake Erie, there are no established populations in Lake Erie or any of the other Great Lakes. However, at least two of the species have migrated up the Mississippi and Illinois Rivers and are within several miles of Lake Michigan. If the fish (which are planktivores and can range up to 40 kg) manage to breach barriers (such as the electric barrier on the Des Plaines River in Illinois), enter the Great Lakes, and become established, they could cause

[9] See for example Kay and Regier (1999) (and related papers in the State of Lake Erie volume) and Charlton (1987), Rosa and Burns (1987) and other papers in the same issue of the Journal of Great Lakes Research.

significant impacts on the ecosystem through competition with other fish that feed on plankton (U.S. EPA and Environment Canada, 2004).

Other emerging or ongoing symptoms of stress in Lake Erie include the continued presence of invasive species (including round gobies and quagga mussels), rising water temperatures, limited shallow water habitat due to hydromodified shorelines on the southern shore (in particular in the western basin), continuing presence of toxic chemicals (e.g., PCBs and persistent pesticides) leading to fish consumption advisories, and findings of pharmaceuticals, hormones and other chemicals of emerging concern in the Detroit River (IJC, 2004; U.S. EPA and Environment Canada, 2004).

Ongoing Impairments in Lake Ontario

Lake Ontario is also continuing to struggle with multiple sources of stress. While *Diporeia* declines have been reported since the 1990s following invasion by zebra mussels, as previously noted, the invasive quagga mussels have contributed to further alterations of the benthic community over broader areas in the lake. Other species that have invaded Lake Ontario in the past 10-15 years, with the potential to out-compete other native species, include the amphipod *Echinogammarus ischnus*, the New Zealand mud snail (*Potamopyrgus antipodarum*), and the predatory zooplankton *Cercopagis pengoi* (or fishhook water flea). The combination of a number of stresses over the past two decades (including oligotrophication, invasion by zebra and quagga mussels, fishery management practices, and climate change) has significantly altered the Lake Ontario fish community, with declines in alewife, native sculpin and whitefish, and increases in some native species associated with lamprey control (Mills et al., 2003). In addition, as with the other Great Lakes, numerous fish consumption advisories remain in place for Lake Ontario, including for PCBs, dioxins, mirex/photomirex and mercury (U.S. EPA, 2005; Ontario MOE, 2005).

PRESCRIPTION FOR RECOVERY

A number of management efforts (at local, state, national, and binational levels) directed at protecting and restoring the Great Lakes over the past three-plus decades have been developed and implemented, and there have been a number of successes. Sea lamprey control efforts starting in the 1950s have been relatively successful at controlling populations of this species, which has taken a significant toll on populations of lake trout and other native fish. Binational efforts following the signing of the Great Lakes Water Quality Agreement (GLWQA) in 1972 resulted in lowering of phosphorus loads to the lakes and improvements in a number of water quality indicators (in particular in the more heavily (nutrient) impacted lower lakes). Subsequent efforts under the GLWQA directed at toxic chemical contamination in Areas of Concern (AOC) (through Remedial Action Plans (RAPs)) have made some progress in addressing contaminated sediments, with two of 43 AOCs delisted. Implementation of Lakewide Management Plans (LaMPs) has also proceeded in recent years, with a number of efforts underway through the LaMP process in each lake to address numerous beneficial use

impairments.[10] Other efforts have been ongoing over the past decade to address specific problems in the lakes or basin, such as the Canada–U.S. Binational Toxics Strategy (addressing mostly persistent, bioaccumulative, toxic (PBT) chemicals) and the Great Lakes Panel on Aquatic Nuisance Species. In addition, the development of indicators of ecosystem health has been conducted through the State of the Lakes Ecosystem Conference (SOLEC) process.

The complexity of the jurisdictional management for the Great Lakes has long been recognized, involving management by two federal governments, eight states and two provinces, Native American and First Nation tribes, municipalities, as well as institutions such as the International Joint Commission, the Great Lakes Fishery Commission, and the Great Lakes Commission offering policy and management guidance. Challenges in implementing programs to protect the Great Lakes have been highlighted in recent reports, including a 2003 U.S. General Accounting Office (GAO) report. The report noted there were 148 federal (U.S.) and 51 state programs funding work on environmental restoration within the Great Lakes basin; a smaller number of federal programs (33) were focused specifically on the basin. The report also noted the lack of any overarching approach to coordinate program activities in support of Great Lakes restoration, as well as the lack of a coordinated monitoring program to determine basinwide progress toward meeting restoration goals (U.S. GAO 2003).

Indeed when faced with a particularly damaging human perturbation in the Great Lakes, our corrective response has generally been to focus on a particular cause of stress and not on the integrated sources of stress that allowed it to occur. For example, when excessive nutrients and associated algal blooms impaired Lake Erie, we focused on the major point sources of phosphorus that fed the algae and lead to oxygen depletion. For a short period, we dampened down that perturbation. However, now that similar degraded conditions have reappeared, we are uncertain if such conditions are due to insufficient control of excessive nutrients, are caused by invasive species, or the result of a combination of stress sources not effectively addressed when the problems were first identified. Compounding the issue, the Great Lakes ecosystem's adaptive responses, transforming into undesired, unhealthy states, seem to be increasing in a dramatic way, in particular due to the uncontrolled introduction of new invasive organisms that out-compete native species whose natural habitat has been severely degraded in a number of areas. In spite of some efforts at addressing invasive species introductions (such as ballast water exchange requirements in the Non-Indigenous Aquatic Nuisance Species Prevention and Control Act of 1990, which do not affect the large majority of ships entering the Great Lakes declaring "no ballast on board" but which in fact may contain residual ballast water), the rate of introduction of new aquatic invaders has remained high over the past 15 years, averaging over one new species every eight months since 1970 (Ricciardi 2001).

Two broad approaches for addressing Great Lakes problems by the policymaking and management communities are treating each symptom, or treating the disease. In addressing each perturbation individually, for example, one would look for approaches to control the spread of zebra or quagga mussels, approaches for reducing polluted runoff, and strategies for addressing existing contaminants and chemicals of emerging concern. Conversely, the Great

[10] For Lake Huron, the lakewide effort is the Lake Huron Binational Partnership, which is not nominally a LaMP.

Lakes community can address the unacceptable adaptive changes in the lakes by focusing attention on the multiple sources of stress that have led to wide-scale disruption of essential nearshore/tributary processes. While recognizing the difficulty in addressing a number of individual stresses (e.g., many years of efforts at suppressing sea lamprey populations), we believe focusing on the multiple sources of stress will lead to the best possible policymaking for and management of the Great Lakes ecosystem.

As we focus on multiple sources of stress, several critical ecosystem objectives should be maintained: (1) restore and enhance the self-regulating mechanisms of the Great Lakes by focusing on the health of key geographic areas. This includes major tributaries and key nearshore areas; (2) to the extent possible, remediate existing and prevent major new perturbations (e.g., stop the introduction of new invasive species and pollutants); (3) protect existing healthy elements by adopting sustainable land and water use practices in the basin that maintain the long-term health of the Great Lakes ecosystem and associated benefits; (4) better monitor ecosystem health and the progress of restoration and protection efforts.

Steedman and Regier (1987) outlined and defined a set of components for Great Lakes ecosystem rehabilitation and those definitions have been modified to formulate the following suggested four primary management objectives for the Great Lakes.

1. **Restore and Enhance Critical Nearshore Areas, Tributaries, and Connecting Channels**

   The ecosystem-based conceptual model should be applied to identify specific geographic areas where the combination of individual sources of stress have contributed or are likely to contribute to the degradation of the nearshore/tributary areas. These are areas where ecosystem breakdown is occurring or is likely to occur, and where action is most likely to restore resiliency to the Great Lakes. These consensus–targeted areas for coordinated restoration and protection efforts may well include those locations already identified as Areas of Concern by the International Joint Commission (expanded geographically to ensure they include the major sources of stress) as well as nearshore/tributary areas that are now showing symptoms or vulnerability to multiple sources of stress. This may require increased institutional focus (including increased emphasis within LaMP efforts) on these nearshore areas. The goal should be to reestablish the natural states critical to nearshore and tributary communities so they can once again perform their stabilizing function, or, if that is not feasible, enhance critical elements that play a role in stabilizing the communities.

2. **Remediate Basinwide Sources of Stress**

   Some of the major stress sources need to be managed through systematic, basinwide approaches. Impacts of stress are often lakewide, if not basinwide, and the remedies are not linked to a limited geographical area. Basinwide stress reduction recommendations include:

   - Support research on control of existing invasive species (e.g., round gobies, zebra and quagga mussels), and to the extent they are identified, implement any control measures
   - Prevent the introduction of new invasive species.

- Mitigate existing negative impacts and prevent significant future human alterations of tributary hydrology and Great Lakes shoreline structure. This can include promoting connectivity of habitat (such as wetlands or free-flowing rivers) important for many species.
- Reduce loadings of nutrients, sediments/dredged material, toxic chemicals, and microbial pollution to the Great Lakes and tributaries from all sources, including addressing continued development pressures and potential for increases in polluted runoff.

Actions such as these will be critical in preventing new perturbations as well as enabling the recovery process. Addressing nonnative species introductions is a key issue. Unlike chemical pollution (except in extreme cases of local pollution), nonnative species, if established, can be extremely difficult to control and have the potential to engineer the ecosystem to a significantly altered state.

3. Protect Healthy Functioning Elements

Sustainable development practices within the Great Lakes basin are required to preserve those portions of the ecosystem that now are healthy, and those that can be restored or enhanced. Recovery of healthy nearshore communities and tributaries, once begun, must be maintained; the conditions that caused the impairments in the first place must be addressed. Watershed-based approaches to land use management provide the best opportunity to minimize negative impacts on the surface water and groundwater essential to the sustainability of the Great Lakes ecosystem. Actions should support and expand activities that employ holistic, watershed-based approaches to land and water use decisions.

4. Monitor Ecosystem Health

Monitoring the ecosystem response through an agreed-upon set of integrative indicators will be an extremely important part of any Great Lakes restoration effort. This effort should build on ongoing efforts such as the development and application of SOLEC indicators. Major changes in the ecosystem are occurring while many of the indicators that governments have traditionally used to measure Great Lakes health (water clarity, ambient water pollution levels, and certain contaminant levels in wildlife) are actually improving. Because nonlinear changes, such as those the Great Lakes are currently experiencing, may confound expected relationships between sources of stress and the lakes' response, traditional indicators may not be adequate descriptors of the health of the ecosystem and may not be useful in predicting future conditions. While some type of consensus on indicators is desirable, given the dynamic nature of the system and our understanding of it, flexibility must also be included in the development and use of indicators.

Certain features of the ecosystem appear to be particularly responsive to the seven sources of stress (including climate change) identified above. Emblematic species such as certain fish-eating birds and populations and reproductive health of key fish species (such as lake trout, lake herring, walleye, yellow perch, and lake sturgeon) as well as wetland sub-ecosystem complexes should clearly be part of any monitoring program. In addition,

monitoring should include a strong human health component, in particular involving tribal/First Nation communities and other populations heavily dependent on Great Lakes fisheries and other resources. There have been varying degrees of research on integrative indicators of ecosystem integrity with most effort focused on emblematic species and wetland complexes. Some evidence suggests smaller organisms at the bottom of the food chain respond more quickly to change, and thus monitoring micro- and macro-invertebrates might well reveal the earliest signs of ecosystem disruption and/or recovery (Odum, 1985).

A key issue for any monitoring network is the ability for rapid detection and identification of new threats, in particular aquatic invasive species. This is particularly important given the difficulty in controlling invaders once established, and the significant economic costs and ecological disruption nonnative species can cause (Pimentel et al., 2000). Use of predictive tools based in part on an understanding of existing invasions can assist in monitoring for potential invasive species (Ricciardi, 2003).

SUMMARY

The health of the Great Lakes ecosystem is in jeopardy. While a number of remediation and other activities have been pursued through the years to address Great Lakes problems, additional actions are urgently needed to restore system elements, particularly in critical nearshore/tributary zones where a chain reaction of adaptive responses to a suite of stresses may be leading to catastrophic changes: ecosystem breakdown and potentially irreversible ecosystem collapse. Without at least partial restoration of these areas, the negative symptoms being observed in the Great Lakes will likely intensify and could degrade irreversibly. Concurrently, actions are needed to control or eliminate sources of basinwide threats to the essential biological, physical, and chemical components of the Great Lakes' ecosystem stability and health. Finally, large areas of the Great Lakes basin waters remain relatively healthy and productive and they provide a wide range of benefits to the people of the region. Protecting the remaining areas from further stress is significantly more cost-effective than attempting restoration after damage has occurred. In summary,

- Historically, when faced with a particularly damaging ecosystem impact, policy responses have focused on particular symptoms and not on the integrated sources of stress that cause these symptoms.
- To increase the effectiveness of policy and on-the-ground restoration, sources of stress and, especially, interactions between those sources need to be explicitly considered.
- One way to prioritize efforts is to focus on specific geographic areas that have experienced ecosystem breakdown and develop efforts to address the multiple sources of stress that have contributed to these impacts.
- Some major sources of stress to the Great Lakes have broad implications and need to be addressed basin-wide since the sources (and their impacts) are not always limited to single locations.
- Watershed-based approaches offer the best opportunity to protect existing basin waters by establishing sustainable land and water use development practices.

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Acknowledgments

The development of this white paper (including meetings and discussions among the authors and other scientists) was made possible through the generous support of the Wege Foundation and the Joyce Foundation. The views expressed in the paper are those of the authors, and do not necessarily represent the views of the financial supporters.

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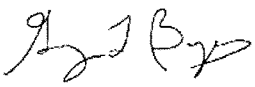

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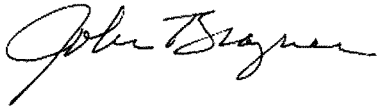

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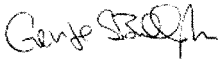

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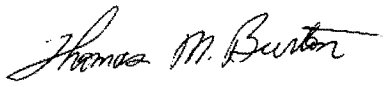

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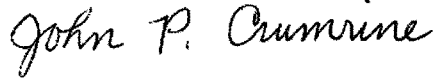

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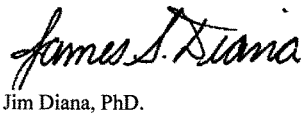

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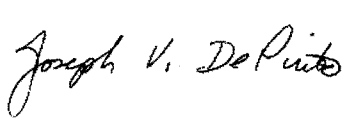

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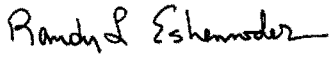

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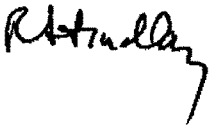

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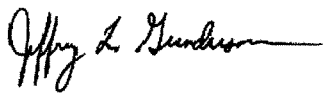

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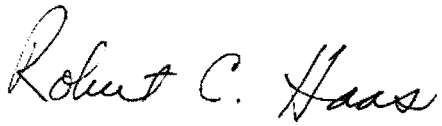

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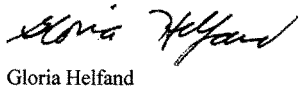

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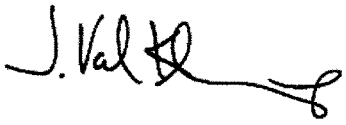

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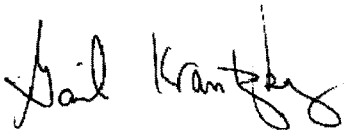

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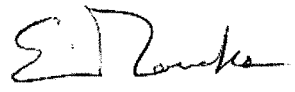

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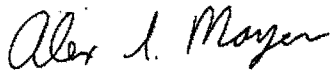

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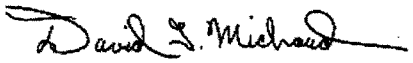

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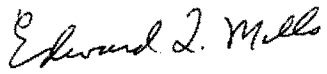

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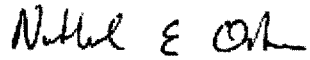

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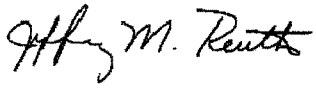

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Pete Richards
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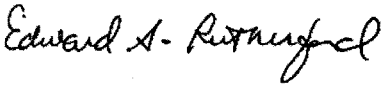

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Gerald Sgro,
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University of Michigan

Alan Steinman, PhD.
Director, Annis Water Resources Institute
Grand Valley State

M.R. Twiss
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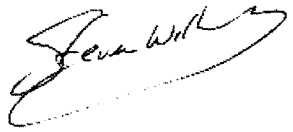

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Healing Our Waters-Great Lakes Coalition
Fiscal Year 2007 Appropriations Request

Interior-EPA

Great Lakes Legacy Act
HOW-GL Recommendation: *$54 million*

Clean Water State Revolving Fund
HOW-GL Recommendation: *$1.35 billion*

Beaches Environmental Assessment and Coastal Health (BEACH) Act
HOW-GL Request: *$10 million*

Great Lakes National Program Office
HOW-GL Request: *$25 million*

Great Lakes Fish and Wildlife Restoration Act
HOW-GL Request: *$5 million*

Energy and Water

Great Lakes Fishery and Ecosystem Restoration Act
HOW-GL Request: *$3 million*

RAP Assistance (Sec 401)
HOW-GL Request: *$4 million*

Chicago Sanitary Ship Canal Barrier
HOW-GL Request: *$6 million*

Science, State, Justice and Commerce

Great Lakes Environmental Research Laboratory
HOW-GL Request: *$10.9 million*

Sea Grant
HOW-GL Request: $72 million

National Coastal Zone Management Grants
HOW-GL Request: *$70 million*

Great Lakes Fishery Commission
HOW-GL Request: *$18.9 million*

International Joint Commission
HOW-GL Request: *$7 million*

Agriculture

Wetland Reserve Program
HOW-GL Request: *Support President's request to support the national enrollment cap of 250,000 acres in FY 2007.*

Conservation Reserve Program
HOW-GL Request: *Support the President's request to support the national enrollment cap of 39.2 million acres in FY 2007.*

Great Lakes Basin Program for Soil Erosion and Sediment Control
HOW-GL Request: *$3 million*

HEALING OUR WATERS

Meeting The Challenge of Great Lakes Restoration

March 6, 2006

Honorable George Voinovich
United States Senate
Washington, DC 20510

Dear Senator Voinovich

Thank you for your efforts to reauthorize the National Invasive Species Act. The Healing Our Waters®-Great Lakes Coalition appreciates your leadership to produce an effective and comprehensive aquatic invasive species bill that protects the waters of our Great Lakes and our nation from harmful aquatic invasive species.

We have attached comments that we hope will assist you in the process the Senate Committee on the Environment and Public Works currently has underway. Our comments are based on the following principles, which will serve as our guide on whether or not we can support federal legislative proposals:

- **Prioritize Prevention.** We strongly endorse policies and approaches based on prevention as the guiding principle.
- **Comprehensive approach.** We support immediate adoption of comprehensive approaches, such as those proposed in S. 770 and H.R. 1591 and H.R. 1592, and oppose proposals such as those contained in S. 363 that fail to adequately control ballast water discharges and address all pathways. Comprehensive legislation must be consistent with the recommendations of the Great Lakes Regional Collaboration.
- **State action.** We expect Congress to develop an effective federal approach to preventing and controlling aquatic invasive species that does not pre-empt state laws or current federal protections. If Congress and the administration fail to move expeditiously to adopt needed legislation, we encourage states to proceed independently to protect their natural resources.
- **Immediate steps.** Although we expect a comprehensive approach to be enacted, there are immediate actions to improve protections and achieve the end goal of preventing all invasions that we can take now, such as:
  - Direct the Coast Guard to implement a type approval program early in the implementation process that allows ships to use best treatments in lieu of ballast water exchange. Adopt new regulations related to ballast exchange, such as "swish and spit," for ships in the No Ballast on Board (NOBOB) condition, while working to implement effective ballast technology systems on all ocean-vessels nation-wide by a final deadline.
  - Provide for full federal funding to operate barrier II and make barrier I permanent, while completing a study of options for permanent hydrological and/or biological separation of the Great Lakes and Mississippi River systems.

As you know, the Great Lakes are a natural wonder of the world that hold one-fifth of the world's fresh water supply. As their steward, you understand how they are the key to the economic health, recreation, and irreplaceable family experiences for the people of the Great Lakes and our nation. The Lakes do so much for us, but now they need our help. Passing comprehensive aquatic invasive species legislation and funding this year will prevent new invaders from contaminating our Lakes and costing our communities millions. The longer we wait, the problems only get worse and more costly.

Thank you again for your continuing leadership. We look forward to working with you to protect and restore the health of the Great Lakes from aquatic invasive species. Also, please do not hesitate to contact Chad Lord at 202-454-3385 for more information.

Sincerely,

Jeff Skelding
Campaign Director
Healing Our Waters-Great Lakes Coalition

Chad Lord
Policy Director
Healing Our Waters-Great Lakes Coalition

Healing Our Waters Coalition recommendations for the development of comprehensive aquatic invasive species legislation.

1. Overall, as per Great Lakes Regional Collaboration (GLRC) recommendations:

a. Pass comprehensive aquatic invasive species legislation that includes sections on: Prevention; Research; Outreach and Education; Early Detection; Rapid Response; Control; Management and Eradication (GLRC, Appendix A, page 1). Passage of such legislation would support programs that achieve expeditious and measurable progress towards halting future species invasions of the Great Lakes and controlling established populations.

2. Ballast Water/ Maritime Commerce Vector, consistent with GLRC recommendations:

a. Ensure that the Environmental Protection Agency retains authority under the Clean Water Act, and states retain sovereignty to protect natural resources within their borders. (GLRC, Appendix A, Milestone 1.5, 5A)

b. Immediately require that ocean-vessels in the no ballast on board condition implement practices that are an improvement to current practices, such as mandatory swish and spit for NOBOB vessels as well as additional protections deemed necessary (GLRC, Appendix A, Milestone 1.1)

c. Immediately require, verify and enforce best performing ship-board ballast water treatment and hull management methods for ocean-going vessels (with a set approval period), with continued upward ratcheting of the treatment floor as treatment performance improves. Approved treatment of all ocean-going vessels operating in the Great Lakes must be to an environmentally protective standard by 2011 (GLRC, Appendix A, Milestone 1.2).

An effective means to accomplish this GLRC strategy recommendation is through the development and immediate implementation of a federally operated early implementation program. If national application is not politically viable, at a minimum this program should be applicable to the Great Lakes states and other states that opt-in. The early implementation process should include:

- Grants Program: An incentive provision to encourage ship operators to participate.
- Timeline: Issue guidelines for approval of treatment systems for ships visiting the Great Lakes and other states participating in the early implementation program within 18 months; all ocean-going vessels operating in the Great Lakes must meet an environmental standard by 2011.
- Requirements for early implementation programs: Set a floor treatment standard for approval of systems in early implementation phase. A floor equivalent to the IMO standard would provide international consistency and assure that treatment surpasses effectiveness of current practices. Use an environmentally protective standard, at least as protective as that contained in S. 363, as the statutorily required performance objective by a date certain.

- Apply national date certain for reaching the final standard and require early implementation of treatment to that standard should technology meet the final standard prior to the statutory deadline, as in S. 363.
- Increase mandatory regulations to enhance effectiveness of BWE for ships not using approved treatments prior to the implementation deadline: In addition to mandatory swish and spit for NOBOB vessels nationwide requirement above, apply additional mandatory protections as deemed necessary- such as in-tank treatment or use of stripper pumps to assure ships using BWE are not threatening the environment unnecessarily.
- Grandfathering provisions: Ships participating will be grandfathered for five years, commensurate with the date of operation and/or degree of effectiveness above the minimum standard.

d. Review and apply best-performing ballast water management practices to non-ocean going vessels operating exclusively within the Great Lakes (including application of ballast treatment requirements for new ships) to eliminate the spread of aquatic invasive species already introduced into the Great Lakes (GLRC, Appendix A, Milestone 1.4)

e. Immediately and significantly expand research, testing, and evaluation of policies and technologies as alternatives to on-board treatment. Alternatives to be investigated should include (but not be limited to) cargo transfer, shore-based treatment, use of Clean Water Act discharge permits, and state/regional actions. If ship-board treatments are shown to be inadequate by 2011, implement effective alternatives that prohibit ballast water discharges from ocean-ships into the Great Lakes (GLRC, Appendix A, Milestone 1.5).

3. **Canals and Waterways Vector, as per GLRC recommendations:**

a. Complete construction of barrier II and make barrier I permanent provide federal funding to operate both dispersal barriers in the Chicago Waterway system, and complete a study of options for permanent hydrological and/or biological separation of the Great Lakes and Mississippi River systems (GLRC, Appendix A, Milestone 2.1). Ensure that legislation clarifies that the USACOE is fully responsible for the continued operations of the dispersal barriers at full federal expense.

4. Organisms in Trade Vector, as per GLRC recommendations:

a. Implement provisions of S. 770 that establish a federal screening process for organisms proposed for trade (GLRC, Appendix A, Milestone 3.2). Include the establishment of consistent guidelines for scientifically based minimum information requirements for screening to be applied by federal agencies with authority to regulate or restrict species movement.

Regulations should be promulgated to implement the screening process recommended above to apply to non-native, non-naturalized species which are already imported, proposed for sale or interstate commerce, but which have not yet become widespread or invasive. It is especially important to retain provisions of S. 770 that authorize screening of organisms already in trade in the United States but which have not been screened for invasiveness, ensuring the grandfathering of species in trade is at least as rigorous as that in S. 770.

Further essential is the expeditious implementation of the screening program (ensuring time till enactment is at least as rigorous as that in S. 770, being 30 months after enactment), the articulation of criteria for screening of invasiveness, and the direction to specific agencies to set up a screening process, again, at least as rigorous as S. 770.

b. Modify S. 770 mandating that the screening process should classify species proposed for trade into three lists- prohibited, permitted, and conditionally prohibited/permitted (GLRC, Appendix A, Milestone 3.3). The federal government should promulgate regulations to be applied by federal agencies with authority to regulate or restrict species movement defining these three lists, and the conditions or restrictions imposed on species in each category.

   Further, if species are cataloged as permitted, but later determined to pose harm, reclassification should be required.

   Regulations should be adopted and implemented to prohibit, restrict, or allow sale, possession and interstate movement of prohibited species following screening.

c. Modify S. 770 to clearly state that the screening process established must place the burden of proof of non-injuriousness on the importer, and that sufficient resources are allocated to prevent the importation of harmful species and the enforcement of laws governing the trade of live organisms (GLRC, Appendix A, Milestone 3.4). Within 18 months of the promulgation of federal regulations, importers should be prohibited from importing any live species on lists (established above) except in compliance with the uniform federal regulations. The Fish and Wildlife Service shall oversee implementation of the screening process and provide screening for any species proposed for importation that is not covered by another federal agency.

   Federal penalties should be levied and associated with the sale of prohibited species of live organisms.

Before the House Subcommittee on Environment, Technology, and Standards

Hearing on *Great Lakes Restoration: How? How Soon?*

Testimony of Dr. Donald Scavia

Professor and Associate Dean, School of Natural Resources & Environment
Director, Michigan Sea Grant
University of Michigan
Science Advisor to the Healing our Waters Great Lakes Coalition

April 21, 2006

Mr. Chairman, Members of the Subcommittee, I thank you for this opportunity to testify before you today on this issue of critical national importance. My name is Don Scavia, and I come here in several capacities: I am Professor of Natural Resources and Environment and Associate Dean at the University of Michigan, and Director of Michigan Sea Grant.

I also represent the Healing Our Waters Great Lakes Coalition. The coalition is dedicated to the protection and restoration of the Great Lakes, and represents 85 national, regional, state, and local organizations, including Great Lakes conservation organizations such as the Alliance for the Great Lakes, Great Lakes United, and the Ohio Environmental Council; national conservation organizations like Ducks Unlimited, Trout Unlimited, the Sierra Club, and the Audubon Society; and educational institutions such as Shedd Aquarium and the Brookfield Zoo. I serve as science advisor to the Coalition's steering committee.

Before joining the faculty at UM, I served in NOAA as a research scientist and research manager for 29 years, providing me with a national perspective on the significance of the Great Lakes, the need for the restoration strategy, and the role science can play in that restoration.

My testimony today focuses on four areas: 1) the need to act now to protect these national treasures; 2) a set of priorities identified by scientific community in their white paper: "A Prescription for Great Lakes Ecosystem Protection and Restoration", 3) the need for a strong science base for restoration, and 4) the critical role for an independent voice that Great Lakes universities can provide.

It is critical to act now

The view from the majority of the science community is that we know enough now to take action. There are indeed important science needs, but they should not create a rationale for inaction. Making a substantial investment in the Great Lakes restoration and protection now will ensure that the economic and ecological health of the Great Lakes region is strong and healthy. This is not only of great importance to the region, but also to the nation. Delaying that investment will make future actions far more costly and could result in irreversible damage to this national and global treasure.

A significant portion of my testimony draws directly from the white paper: *Prescription for Great Lakes Ecosystem Protection and Restoration: Avoiding the Tipping Point of Irreversible Changes*[1], which I include as part of my testimony. The paper was written by 8 scientists and endorsed by over 60 other leading scientists from every state in the Great Lakes basin.

The authors and endorsers of the white paper point out that Great Lakes ecosystems may be nearing a tipping point – beyond which the lake ecosystems would move to a new state, one that is less desirable from a recreational, commercial, and aesthetic perspective and, more importantly, one from which it will be very difficult, if not impossible, to recover. The problem with ecological tipping points, though, is that you cannot be sure you have reached it until it is too late. Thus, we urge a precautionary approach to avoid passing that critical point.

In another consensus report (*Scientific Consensus on Marine Ecosystem-Based Management*)[2] over 200 scientists cautioned against reaching thresholds beyond which altered marine ecosystems may not return to their previous states. In that report, they also state that because the tipping point for these irreversible changes may be impossible to predict, increased levels of precaution are prudent. While the same ecological principles cited for the world's oceans apply to the Great Lakes, the lakes may be even less able to cope with stress than typical coastal marine environments because the Lakes are relatively closed and evolutionarily younger systems ill-adapted to large fluctuations.

Symptoms of stress

There is widespread agreement among scientists that the Great Lakes are exhibiting symptoms of stress from toxic chemicals, invasive species, excess nutrients, shoreline modifications, change in land use, hydrologic alterations, and climate change. While most of these stresses are not new, more than ever we are seeing symptoms of ecosystem breakdown -- in other words an ecosystem nearing its "tipping point" - caused by the combinations of these stresses that overwhelm natural buffering capacities that enable ecosystems to be resilient. Large areas in the lakes are undergoing rapid changes where these combinations of persistent and new stresses are interacting to trigger synergistic ecosystem degradation. Rapid ecological responses to new stresses that may interact with each other and with remnant features of past responses to older stresses, have exhibited sudden and unpredicted changes in the past 5 to 10 years, to an extent that is unique in Great Lakes' recorded history. The new stresses have complicated past and current efforts to remediate earlier harmful phenomena, such as:

- Extirpation or major declines in important native species (such as lake trout and deepwater ciscoes) due to over fishing and invasive species (such as sea lamprey predation on lake trout, and competition with deepwater ciscoes by invasive alewives and rainbow smelt);
- Declines in other valued and important native aquatic species (including certain plankton, unionid clams, and certain native fish species) caused by altered food webs and introductions of aquatic invasive species (e.g., zebra and quagga mussels, round gobies

[1] http://www.restorethelakes.org/PrescriptionforGreatLakes.pdf
[2] http://compassonline.org/files/inline/EBM%20Consensus%20Statement_FINAL_July%2012_v12.pdf

and predatory zooplankton such as *Bythotrephes cederstroemi* and *Cercopagis pengoi* (two species of water fleas);

- Widespread reproductive failures of keystone, heritage, and other (both native and introduced) fish species, including lake trout, sturgeon, lake herring, coaster brook trout, and Atlantic and Pacific salmon caused by toxic contamination and loss of habitat, including loss of over 90% of wetlands along the Huron/Erie corridor;
- Approximately 50% of the threatened and endangered birds are wetland dependent species, and no wonder given the estimated 60% loss of wetlands in the Great Lakes watershed.
- Toxic contamination of fish threatens not only the species themselves, but also other wildlife and people, resulting in fish consumption advisories throughout the Great Lakes and inland lakes and rivers;
- General reduction in water quality, increased toxic algal blooms, Type E botulism in fish and waterfowl, and contamination of drinking water.
- Fouling of coastlines and near-shore areas from sewage overflows and contaminated runoff, resulting in beach closings, and loss of habitat for fish and waterfowl;
- Elimination of the rooted plant community and disruption of food webs in Sandusky Bay and Cootes Paradise in Hamilton Harbour, due to sediment and other pollutant loads.

Critical food-web disruptions are a particular case in point with regard to the tipping point. These disruptions date back to at least the invasion of the sea lamprey and the cascade of loss of native fishes and invasions of alewife, rainbow smelt, and a host of others.

However, more recent dramatic disruptions include the now well-documented rapid disappearance of the once abundant benthic invertebrate, *Diporeia,* from large areas of all the lakes except Superior. These dramatic declines are likely linked quite closely with the zebra and quagga mussel invasion, and may be one of the clearest warning signs of a tipping point where the Lakes may be moving into a new regime where these mussels maintain high populations, and prevent any substantial recovery of *Diporeia,* the once primary diet of important fish. In fact, Dave Jude - my colleague at the University of Michigan told me just this week that for the first time he has found enormous numbers of quagga mussels in Lake Michigan at depths where only few or none were found before. At a 100-meter depth, he pulled up between 600 and 700 pounds of quagga mussels in just a 10 minute bottom trawl tow. So many members of the fish community have historically depended on *Diporeia* that lacking this critical food source is another clear indicator of the ecosystem reaching a tipping point.

Restoration Priorities

The Great Lakes Regional Collaboration ("GLRC") has done an outstanding job of identifying the major stresses, and their recommendations for addressing them come just in time. The Collaboration is truly an historic event in two important respects. First, it is the first time that all levels of government and virtually all private stakeholders have come together to draft and support a single Great Lakes restoration plan, the "Great Lakes Regional Collaboration

Strategy." Over 1,500 people participated in the drafting of the final plan, including representatives from cities, counties, state agencies, tribal representatives, federal agencies, Congressional staff, businesses, conservation organizations, university scientists, and concerned citizens. Many of the scientists who drafted the "Prescription paper" as well as members of the Great Lakes Healing Our Waters Coalition actively participated in the Collaboration.

The GLRC Strategy sets a second precedent: it is the most comprehensive Great Lakes restoration and protection plan in history. It documents virtually all of the problems besetting the Great Lakes; it recommends concrete solutions; it identifies programs to implement those solutions; and it recommends the funding needed for those programs to succeed. This level of consensus is unprecedented. And unlike so many other plans that have come before it, this isn't just the plan for any one stakeholder or any one lake. It has received input and endorsement from the scientific community, agencies, public interest organizations, businesses, and recreationists. And, it comes as a result of the president's May 2004 Executive Order. Importantly, many of the GLRC recommendations build upon and strengthen successful existing efforts.

The GLRC is a critical first step in forming a permanent institutional mechanism to guide restoration efforts and to facilitate coordination among public agencies, research institutions, and stakeholder organizations to reach consensus on specific priority actions and integrated measures of progress. It is important to also recognize, however, that these international waters require strong coordination and cooperation with Canada. So, the next step in planning should integrate GLRC efforts with those of the Great Lakes Fishery Commission, International Joint Commission, and environmental and resource programs of Great Lakes states and provinces.

The GLRC recommendations are important because the aim to reduce ecosystem stresses. However, it will never be possible to eliminate them completely, and even then it will likely take decades to achieve. So we must, at the same time, and perhaps with more urgency work to restore the Lakes' natural buffering capacity by increasing its resiliency – or ability to cope with stress. ***The consensus of the authors and endorsers of the "Prescription paper" is that the most important way to increase that resiliency is to restore the terrestrial and aquatic environments of the nearshore regions and connecting rivers and straights.***

One key priority, however, that cannot be addressed through a primary focus on restoring this near shore resiliency is the effort to stop invasive species from entering the Lakes. This can only be done through comprehensive, basin scale efforts. In this case, prevention is far more effective than restoration because removal of established invasive species, or restoration from their impacts are almost impossible.

A focus on the nearshore region -- Over time, the combined effects of the suite of stresses have overwhelmed the ecosystem's self-regulating mechanisms. In the past, healthy nearshore communities and tributaries helped reduce the impact of many stresses on or entering the lakes. We now recognize that these nearshore and tributary areas constitute a buffer zone and add to the lakes' ability to rebound from stress, and without healthy buffers, the lakes' health is much more vulnerable. For this reason, it is of critical importance to ensure that the nearshore and tributary areas receive the most significant and urgent restoration attention.

Specific geographic areas where stresses have contributed or are likely to contribute to the degradation of the nearshore/tributary areas should be targeted first. These areas may well include those locations already identified as Areas of Concern by the International Joint Commission (expanded geographically to ensure they include all the major sources of stress) as well as nearshore/tributary areas that are now showing symptoms or vulnerability to multiple sources of stress. And this may require increased institutional focus (including increased emphasis within LaMP efforts) on these nearshore areas. This also has the added advantage of restoring urban coastlines, which in many instances have the most potential for restoration and is consistent with the Great Lakes Cities-St. Lawrence Cities Initiative "urban revitalization" agenda. The goal should be to reestablish the natural states critical to nearshore and tributary communities so they can once again perform their stabilizing function, or, if that is not feasible, enhance critical elements that play a role in stabilizing the communities. Many of the GLRC recommendations, if implemented properly, will provide this needed emphasis on near-shore (e.g., recommendations related to the AOCs, wetlands, coastal health, nonpoint source pollution).

With this focus on the nearshore and connecting rivers and straights, the Prescription paper proposes the following four major components that must be combined to develop a successful ecosystem restoration effort:

- *Restore* - Restore critical elements of the *ecosystem's self-regulating mechanisms*. To the extent possible, reestablish natural attributes of critical nearshore and tributary communities so they can once again perform their stabilizing function. Where full restoration of natural attributes is not possible, improve desirable aspects through *enhancement* of important functions.

- *Remediate* – As outlined in the GLRC report, remediate abusive practices that create *sources of stress.* Reduce or eliminate physical habitat alterations, pollution loadings, pathways for invasive species, and other stressors or their vectors into the lakes.

- *Protect* - Protect the functioning portions of the ecosystem from *impairment*. Preserve those portions of the ecosystems that now are healthy, and those that can be restored or enhanced, through sustainable development practices within the Great Lakes basin.

- *Measure* - Building on existing efforts, measure ecosystem health through a set of agreed-upon integrative indicators that can serve to assess current conditions and monitor the progress of restoring the lakes. This final component is also key element of the three-pronged approach to the recommended plan for science in support of restoration outlined below.

Science Priorities

While investments in long-range, basic research is important, and such investments in the Great Lakes lag significantly behind those of coastal and marine environments, these investments in the future need to be complemented with science that directly supports the urgent needs for restoration. I should note, however, that thoughtful research can be both basic and useful as

Donald Stokes outlined clearly in his book, *Pasteur's Quadrant*[3]. I recommend a science plan with three broad components: Integrated Assessment, Monitoring, and Restoration Innovation.

Integrated Assessment – Decades of research and monitoring have produced vast quantities of data and information on Great Lakes conditions, processes, and functioning. However, much of this information is inaccessible or not organized and synthesized in ways most useful to local, state, and Federal decision makers. Providing this information, along with its level of certainty, in credible and timely ways on issues identified by decision makers is an essential element of science support for restoration and protection.

Integrated Assessment (IA) is a formal approach to synthesizing and delivering relevant, independent scientific input to decision making through a comprehensive analysis of *existing* natural and social scientific information in the context of a policy or management questions. These assessments not only draw on the talents of subject matter experts, but also engage the broader stakeholder community in defining boundaries, integrating traditional knowledge, and identifying socially-acceptable solution options. The IA results are peer reviewed and subject to public comment, and the process should be supported by funds independent of those with vested interests in any particular solution option. IA takes the following structured approach:

1. Define the policy relevant question around which the assessment is to be performed. This is done in conjunction with managers and policy makers such that the analysis is directed toward solving specific policy or management needs.

2. Document the status and trends of appropriate environmental, social, and economic conditions related to the issue. This is a value-independent description of current conditions and, to the extent possible, the historical trends in those properties.

3. Describe the environmental, social, and economic causes and consequences of those trends. This often includes simulation, statistical, and other explanatory models and analyses. Again, these descriptions are fact-based although subject to analysis and interpretation.

4. Provide forecasts of likely future conditions under a range of policy and/or management actions. This can be quantitative forecasts from models or other trend analysis tools. These are subject to considerable scientific evaluation and interpretation.

5. Provide technical guidance for the most cost effective means of implementing each of those management options. These efforts are designed to provide those who are responsible for implementation the menu of approaches available to them, along with some evaluation of their potential for success and cost-effectiveness

6. Provide an assessment of the uncertainties associated with the information generated for the above steps and outline key monitoring, research, and modeling needs to improve

[3] Stokes, D.E. 1997. Pasteur's Quadrant. Basic Science and Technological Innovation. Brookings. Washington, DC. 180 Pg.

future assessments in this area. This assessment of uncertainties is often a guide to future research needs.

Such approaches have been very useful, for example, in assessments of the impacts of climate variability[4] and the causes and consequences of hypoxia in the Gulf of Mexico[5] (called for in the Harmful Algal Bloom and Hypoxia Research and Control Act), as well as a key element of the new science program for Michigan Sea Grant[6]. The Gulf of Mexico Hypoxia IA, for example, led to a Federal-state-tribal Action Plan for reducing nutrient loads to the Gulf, the primary anthropogenic driver of hypoxia.

Monitoring - Monitoring of agreed-upon integrative indicators is extremely important. This effort should build on ongoing efforts such as the development and application of State of the Lakes Ecosystem Conference (SOLEC) indicators. However, major negative changes in the ecosystem are occurring while many of the indicators that governments have traditionally used to measure Great Lakes health (water clarity, ambient water pollution levels, and certain contaminant levels in wildlife) actually show improvement. Because nonlinear changes may confound expected relationships between sources of stress and the lakes' response, traditional indicators alone may not be adequate descriptors of ecosystem health and may not be useful in predicting future conditions. While some type of consensus on indicators is desirable, given the dynamic nature of the system and our understanding of it, flexibility must also be included in their development and use.

Monitoring is essential to not only identify emerging issues, but importantly in the context of restoration, to track progress. Most managers and scientists now embrace the notion of adaptive management where adjustments in strategies are made as restoration proceeds. But, without effective monitoring systems, geared toward tracking progress at the right scales, adaptive management is not possible. A key issue for an effective monitoring network in this context is the ability for rapid detection of change on scales relevant to local and state decision makers, as well as Federal policy makers. Therefore, a priority should be placed on the nearshore terrestrial and aquatic ecosystem in concert with the geographic focuses of restoration. This requires close coordination of state and tribal agencies and the academic community to add higher spatial resolution to the Lake- and region-scale efforts of the Federal agencies.

Restoration Innovation – While we have enough information to proceed now with restoration, the task is long term and we need investments in new ways to deal with existing and emerging threats, as well as to find the most cost-effective technologies for identifying threats and restoration approaches. Such innovations could include: new ways to detect and monitor threats to ecosystem structure and functioning; improved methods for synthesizing and integrating information to provide useful forecasts of the impacts of management action or inaction; technologies for restoring wetlands, coastal habitats, and contaminated sites; methods to value ecosystem goods and services; assessments of the social causes and impacts of ecosystem change; and means to reduce uncertainties in Integrated Assessments.

[4] http://www.usgcrp.gov/usgcrp/nacc/default.htm
[5] http://www.nos.noaa.gov/Products/pubs_hypox.html
[6] http://www.miseagrant.umich.edu/ia/index.html

While the needs for such innovations can be identified, their solutions are hard to predict, and are best sought through investing in, and nurturing, the skills and talents of Great Lakes scientists, including through academic programs.

The Role of Universities

A strong and effective science program supporting restoration and protection of the Great Lakes needs the innovation, expertise, and independent voice of the academic community. During the 1960s, 70s, and 80s, the Great Lakes academic community was well-supported and provided an important complement to the science conducted in the Federal and state labs. I know this first hand because I worked in a Great Lakes Federal lab from 1975-1990. Working together, and with state agencies and environmental NGOs, these communities identified and analyzed the most important issues of the time – fisheries decline, eutrophication, and chemical contamination. Academic institutions contributed expertise in fisheries biology, food-web structure, ecosystem dynamics, biogeochemistry, ecosystem modeling, and engineering to these successes through cooperation and participation in activities and programs under the auspices of the bi-national Great Lakes Water Quality Agreement and Great Lakes Fisheries Convention, for example.

Through both applied research and research that improved our fundamental understanding of the Lakes' physical and ecological dynamics, academic research and modeling played historically important roles in critical resource management and policy decisions:

- Reducing phosphorus inputs to reduce algal growth and improve water clarity;
- Sea lamprey control;
- Reductions in industrial pollution;
- Reduction in contaminants such as DDT and PCBs;
- Reduced occurrences and magnitude of chemical spills and discharge of objectionable and nuisance materials that form scums, sludge, and odors;
- Confinement and removal of contaminated sediment;
- Growing recoveries of some native species, such as the lake trout in Lake Superior and the bald eagle throughout the Great Lakes

And these efforts have had significant impacts. In many places, nutrient control reduced algal overgrowth and increased water clarity, sea lamprey control allowed a rebound in fish populations, reduced industrial pollution resulted in declines of DDT and PCBs in fish and wildlife by as much as 90%, confinement and removal of contaminated sediment are progressing, and populations of native species, such as the lake trout in Lake Superior and the bald eagle throughout the Great Lakes are making substantial recoveries.

In spite of this progress, and as outlined above and in the GLRC report and the "Prescription paper", the Great Lakes are exhibiting a multiplicity of nagging and emerging issues that are impeding further ecological and economic recovery. Just when we need more research and monitoring to assist sound, science-based management and policy decisions, the Great Lakes research community is in decline. An aging work force will soon retire taking with it historical knowledge and perspective because of limited ability to hire young scientific replacements. Old and outdated scientific tools, facilities, and vessels are not being upgraded to address the

complex problems of today. Funding for both Federal and state science agencies are not keeping up with inflation and funding to the Great Lakes academic community is scarce, resulting in a significant loss of Great Lakes researchers from Great Lakes academic institutions.

Academics can and should play strong, even dominant, roles in Integrated Assessment, in assisting in and interpreting results from monitoring programs, in identifying and clarifying emerging issues, and in providing innovative solutions to both long-standing and new issues. Academics can be viewed as knowledgeable and interested parties in this management, but not constrained by the mission and viewpoints of their home organization. To be most effective, their work needs to be independent, based on competition and peer review, and well-funded. There are existing models for Federal programs that can provide that support in ways that are connected to and integrated with Federal and state science, but not handmaiden to it. These include EPA's Science to Achieve Results (STAR) program, NOAA's Center for Sponsored Coastal Ocean Research (CSCOR), and the Great Lakes Sea Grant programs. Each of these programs has a distinct mission that complements the others, as well as those of the Federal labs. They have established processes for interacting with the academic community and administering effective extramural grant programs. They require increased funding and encouragement to continue to expand their programs in the Great Lakes, focused on supporting restoration and protection needs.

It is important to build upon proven models of academic-governmental partnerships like Sea Grant and NOAA's CSCOR with well-funded, objective, and independent academic research that has strong linkages to resource management and policy needs. These programs can supply the people and new technologies for problem-solving, technology transfer, and the communication of science to policymakers and the public.

Summary and Conclusion

I would like to recap some of the key concepts from the above as responses to specific questions provided for this Hearing:

1. *What are the top three recommendations in the GLRC Strategy that you believe could be implemented with existing funding? What scientific research, scientific information, or science-based products are required to support the implementation of these three recommendations? Would your answers be different if funding could be increased?*

The top three recommendations, as outlined above, are 1) focus on restoring the near shore ecosystems -- including watersheds and tributaries and the connecting rivers and straights -- to increase the ability of the Great Lakes ecosystems to mitigate stress, 2) stop introductions of new invasive species, and 3) reduce the loads of non-point source pollution. These are priorities for both existing and increased funding; however, little more can be done at existing funding levels.

The key science priorities are 1) support for Integrated Assessments that harvest the decades of monitoring data and research output, integrate that information with stakeholder perspectives and considerations, and synthesize and deliver the results in ways that are accessible to decisions makers as they consider the key management and policy actions underpinning restoration; 2) support for increased monitoring near shore regions by states and Universities at the higher

spatial and temporal resolution needed to track progress and support adaptive management at relevant restoration scales; and 3) support for "restoration innovation" – creation of new technologies, methodologies, and processes for cost-effective restoration over the next decade.

2. *Has the GLRC led to more informed resource management planning decisions? What kinds of scientific information are now being taken into account in those decisions because of the GLRC? To what extent has the GLRC helped foster new or stronger collaboration between scientists and policy makers? What is your role in strengthening the relationship between scientists and policy makers?*

The simple answer to the first part of this question is "no". The GLRC focused on developing a Strategy for the future, and not on informing today's specific resource management planning decisions. While the GLRC has fostered new and stronger collaborations among decision makers and opinion leaders from a wide array of sectors, including some from the science community, it is too soon to know if these new collaborations will make a difference. The stage has been set by the Collaboration, though, and I am hopeful.

My role in strengthening the relationships between scientists and policy makers, as Michigan Sea Grant Director, has been to work with decision makers in Michigan's Departments of Natural Resources and Environmental Quality to identify key Great Lakes restoration issues that need science support, and solicit proposals from the academic community to conduct Integrated Assessments for them. Sea Grant and key partners will fund several IA projects this next funding cycle, both to address those needs and to serve as a model for other funding programs interested in strengthening the relationship between scientists and policy makers. We would like to see Federal grant programs focused in the same way.

3. *Are there additional actions EPA and other Federal agencies should be taking to help implement the GLRC?*

As mentioned above, the GLRC was an important first step in forming permanent institutional mechanisms to guide restoration and to facilitate coordination among public agencies, research institutions, and stakeholder organizations. It is important for EPA and the other U.S. Federal agencies to also recognize that Great Lakes protection and restoration require strong coordination and cooperation with Canada. I am sure the U.S. agencies recognize this. So, the next step in planning and implementation would be to integrate GLRC efforts with those of the Great Lakes Fishery Commission, International Joint Commission, and environmental and resource programs of Great Lakes states and provinces.

4. *What are the biggest challenges you see in implementing the Strategy, particularly in terms of meeting science and information needs?*

The biggest challenges for implementation are 1) ensuring adequate funding for implementing the GLRC Strategy recommendations, and 2) identifying appropriate leadership and coordination among Federal agencies, and allowing for honest engagement of the full stakeholder community.

I understand the overall estimates for funding are quite significant, but it is time for Great Lakes restoration to receive support commensurate with its national importance and at least comparable

to other large-scale regional restoration efforts. This is particularly true when one compares, not only the range of stresses that impact the Great Lakes, but their enormous size compared to other regional restoration initiatives. It is also important to ensure appropriate funding for the science priorities outlined above for supporting the restoration effort. A rule of thumb that can make sense is to provide 10% of restoration costs for science support.

The overall restoration task is daunting and requires effective leadership from the Federal government (preferably one agency); however, top-down approaches (whether for implementing restoration or for conducting supporting science) will not work. Setting specific goals, priorities, and responding to science needs requires full participation of Federal, state, and local governments; NGOs; Universities; and the private sector. It is not yet clear, that the GLRC has mechanisms in place to do that.

5. *What outcomes do you expect to see one year from now as a result of implementing the GLRC Strategy?*

Frankly, I do not expect too much in one year. It is very early in the process and developing the Strategy was a major undertaking that engaged the broadest spectrum of US participants. However, I fear that the lack of any significant new funding in the President's budget may set the stage that prevents holding the Collaboration together. Everyone participated in good faith, and many compromises were made to form solidarity behind the Strategy. Without significant movement and funding toward implementation, I am not sure much will be accomplished.

Closing

In closing, Mr. Chairman, I would like to thank you and the Subcommittee for your leadership in scheduling this hearing and maintain the momentum for Great Lakes restoration. I particularly would like to thank you for keeping science on the table. Without a strong science base, restoration will be less effective and more costly to the taxpayers.

I would also like to thank you for inviting me to participate in this hearing. The Great Lakes science academic community looks forward to working with you and all of our Collaboration partners to continue this important work, because it is only through concerted, coordinated action that we will realize our mutually-held goal of a cleaner, healthier Great Lakes.

I would be happy to answer any questions that you may have.

RESPONSE BY ANDY BUCHSBAUM TO AN ADDITIONAL QUESTION FROM SENATOR INHOFE

Question. The Strategy establishes funding levels for each of its goals. However, there seems to be some disagreement as to who will be providing these funds. In your view, how much of the $20 billion in the Great Lakes Strategy do you expect from the Federal Government, the State governments and the local governments?

Response. The Great Lakes Regional Collaboration's December strategy reports common-sense recommendations on how our Nation can restore and protect the Great Lakes. It outlines both funding and policy recommendations aimed at ending sewer overflows, stopping invasive species, and cleaning up toxic sediments. It shows that the strategy's goals can only be met if every stakeholder group is prepared to invest time and resources in protecting and restoring the Great Lakes.

Overall, the GLRC's strategy recommends that about sixty percent of the total recommended funding of about $20.0 billion come from the Federal Government, forty percent from other stakeholders such as state, local and tribal governments and leading NGOs. We think this reflects an overall understanding in the Collaboration that states and cities are responsible for providing the match Congress requires for the Federal programs that contribute to Great Lakes restoration and protection. We feel that this is an appropriate division of what it will take to restore the health of the Great Lakes. We emphasize, however, that restoring the Great Lakes is a collaborative effort and all stakeholders must be willing to invest in achieving its goals, including NGOs and member groups of the Healing Our Waters Coalition who already are investing financial resources and in-kind services.

This collaborative spirit is reflected in the GLRC's recommendations. For example, one recommendation in the GLRC strategy recommends that $13.75 billion be spent to eliminate inadequately treated wastewater, which is a health risk to our families, from being dumped into the Lakes. Sixty percent of this funding would come from the Federal Government; forty percent from local sources. State and tribal governments and leading non-governmental organizations have also demonstrated a willingness to match wetlands funding provided by Federal agencies and Congress.

It is also important to note that there are some programs that should be funded solely by the U.S. Government like programs implementing the international conventions with Canada, Japan, Mexico and Russia for the protection of shared migratory bird resources, the 1955 convention on Great Lakes fisheries, and the 1909 Boundary Waters Treaty. The United States has interstate obligations that must be met in order to fully protect and restore this resource. Funding for the Asian carp barrier, for example, and other Army Corps projects has benefits beyond the States bordering the Great Lakes. These obligations are known and should be fully funded by the Federal Government without State or municipal support.

RESPONSES BY ANDY BUCHSBAUM TO ADDITIONAL QUESTIONS FROM SENATOR JEFFORDS

Question 1. Can you elaborate on and submit any materials for the record regarding your explanation of the scientific assessment of the health of the Great Lakes?

Response. The best description of the scientific assessment of the health of the Great Lakes is the paper published by 60 of the Great Lakes region's leading scientists: Prescription for Great Lakes Ecosystem Protection and Restoration. The paper cites 44 specific scientific studies, and identifies an additional 27 studies as general references. One of the paper's authors, Dr. Donald Scavia (Professor and Sea Grant Director, University of Michigan) has prepared testimony for a hearing of the House Science and Technology Committee that further explains this assessment. His testimony and the original Prescription paper, with its listing of additional sources, are provided with these responses.

In addition, the National Wildlife Federation published a study documenting the collapse of the foundation of the Great Lakes food web. That study, Ecosystem Shock: The Devastating Impacts of Invasive Species on the Great Lakes Food Web, is also provided here.

Question 2. Can you describe your thoughts on the need for comprehensive invasive species legislation?

Response. The scientists in the two studies referenced above (Prescription and Ecosystem Shock), as well as Dr. Scavia in his testimony, identify the introduction of invasive species into the Great Lakes as one of the most severe and urgent threats to the integrity of the lakes' ecosystems. The reason is simple: with over 180 invasive species already established in the Great Lakes and one new invader enter-

ing the lakes on an average of every 28 weeks, the lakes cannot hope to establish any sort of ecological equilibrium, and instead are seeing increasing episodes of ecosystem breakdowns. The collapse of the foundation of the food web in large stretches of the bottoms of the lakes described in the Ecosystem Shock report has been attributed to these invasions.

The scientists and many others recommend a comprehensive approach to preventing new introductions. Most invasive species (e.g., zebra and quagga mussels) historically have entered the Great Lakes via discharges from ballast water. But ballast water controls are not enough; others (e.g., sea lamprey) have entered via canals, and still others through intentional introductions. We need comprehensive legislation to address all vectors.

The Great Lakes ecosystem has not only felt the devastating impacts of invasive species, it has also unfortunately been the gateway for new invaders into other U.S. waters. For example, the zebra mussel has spread as far west as Oklahoma and continues its march across America's inland lakes and streams, threatening those ecosystems, fish and wildlife as it goes. Science tells us that invasive species anywhere are a threat to ecosystems everywhere, and the proof can be seen in some of the country's most magnificent natural resources: San Francisco Bay, Chesapeake Bay, Coastal Louisiana, to name a few. Once a non-native species establishes itself, it is there for good. When it comes to an effective policy to deal with invasive species, prevention is the key, which is why the Nation needs a strong, comprehensive solution to deal with the problem that afflicts United States and international waters.

Question 3. I want to thank you for your support for the Lake Champlain Canal Barrier project. Can you elaborate on how important that project and the Chicago Sanitary Ship Canal Barriers are for the Great Lakes?

Response These two barriers are absolutely critical. Canals and other channels provide routes in and out of the Great Lakes for invasive species that are highly damaging. For example, sea lamprey have devastated the Great Lakes trout fishery, and states and the Federal Government now must spend millions each year in order to control them.

Now, Asian carp are traveling up the Chicago Sanitary and Ship Canal and are poised to invade Lake Michigan. If they do, they will quickly decimate the existing ecosystem, turning the Great Lakes into what one scientist has called a "giant carp farm." The Chicago Sanitary Ship Canal Barrier is the only measure standing between the Asian carp and the Great Lakes; it is the only thing saving the Great Lakes from a completely devastated ecosystem and loss of high-value fisheries (trout, walleye, whitefish and perch). Congress must authorize the completion and operation and maintenance of this bather any way it can.

Likewise, the proposed Lake Champlain Canal barrier is essential in closing another invasive species vector to the Great Lakes: stopping invasive species from traveling up through the Hudson, into Lake Champlain, and then into the Great Lakes system via the St. Lawrence Seaway. The Lake Champlain bather will have important benefits for the Lake Champlain and the Great Lakes.

RESPONSES BY ANDY BUCHSBAUM TO ADDITIONAL QUESTIONS FROM SENATOR VOINOVICH

Question 1. What is the next critical step for the Collaboration?

Response. The Collaboration needs to take two steps: one, establish short-term measures, and two, set up long-term success. In the short term, the Collaboration should develop a list of priority budget and policy recommendations made in the GLRC strategy. For example, passage of the National Aquatic Invasive Species Act is probably the highest priority policy recommendation in the strategy, and should be a legislative priority for the Collaboration. On the budget side, the Great Lakes states and cities have identified priority budget items, as has the Healing Our Waters Coalition. These similar budget recommendations should be the Collaboration's fiscal year 2007 budget priorities.

An immediate step that can be taken, which would show clear commitment to this process, is for Congress to provide funding for the almost identical priorities of the states and cities and non-government organizations. We have a restoration blueprint that is backed by science and has the support of the region's leaders. A down payment now will demonstrate to citizens that our Nation's leaders understand that we cannot wait to address the problems facing the lakes. To do so only makes the problems worse and more expensive to solve.

In the long term, the Collaboration should recruit co-sponsors and additional champions for legislation designed to implement the Strategy—the Great Lakes Collaboration Implementation Act—and other legislation that will provide the Great

Lakes region with the resources necessary to meet the Strategy's many recommendations. The Collaboration must also continue to set short-term budget priorities to ensure that we are spending taxpayer dollars wisely and effectively.

In taking these steps, the Collaboration needs to reconvene and begin identifying concrete ways to both fulfill the GLRC strategy's recommendations and meet its goals. The Collaboration is the perfect venue to clarify future responsibilities of GLRC stakeholders. It also should report back to Congress and the public on the weaknesses and strengths of strategy implementation.

Question 2. How can we best coordinate this massive restoration effort?

Response. We believe that the mechanisms codified in the Great Lakes Restoration bill (Great Lakes Collaboration Implementation Act) will help coordinate the restoration effort: the coordination of Federal efforts through the Interagency Task Force and the coordination of all efforts by the Executive Committee of the Great Lakes Regional Collaboration. We also believe that there needs to be a special emphasis on the role of the U.S. Environmental Protection Agency's Great Lakes National Program Office. We make these recommendations with two caveats. First, the Interagency Task Force needs to have full participation by high-level officials from all the agencies. The bill makes it a task force of the U.S. EPA, creating the risk that it will be viewed as a creature of U.S. EPA and not a multi-agency effort where other agencies have full responsibilities and accountability. The EPA's oversight role, however, must be scrutinized. Second, the GLRC Executive Committee will be an effective coordinating body only if it fully engages all stakeholders in the region—state, local, tribal and non-governmental organizations—and remains responsive to their concerns and recommendations. We believe the bill has the proper structure to lead to that result, but the way the bill is implemented will be critical.

Question 3. How can we better coordinate Great Lakes programs at all levels of government so that we are more efficient and effective?

Response. As discussed above, through the Great Lakes Regional Collaboration and the mechanisms established in the GLRC implementation bill. The implementation bill's reporting requirements gives Congress the opportunity to conduct proper oversight on the implementation of the GLRC.

Question 4. What can the environmental community do to raise the profile of this restoration effort beyond the region? Canada?

Response. There is no single, easy answer to these questions, and they are ones that we have wrestled with for years. As to the first question, we have embarked on a multi-pronged strategy:

First, we must take advantage of the fact that many people outside the Great Lakes region know and love the lakes, either from visiting or because they used to live near them. Millions of people have enjoyed the lakes and the outdoor recreational opportunities they present, including world- class fishing, swimming, hunting, camping, and hiking The Healing Our Waters-Great Lakes Coalition plans to activate the support of this large population of Great Lakes supporters from outside the region through national media and outreach efforts.

Second, we must document the national economic benefits that Great Lakes restoration will provide. The Great Lakes region is responsible for producing a third (32.5 percent) of the U.S. gross State product [based on Gross State Product, 2004] with less than a quarter of the Nation's population. The HOW Coalition is co-sponsoring a Brookings Institution study with the Council of Great Lakes Industries to show the benefits of Great Lakes restoration to the Great Lakes and national economies.

Third, we must encourage members of Congress from outside the region to visit and appreciate the Great Lakes.

Lastly, environmental and conservation organizations in Canada are also working on Great Lakes restoration. For example, organizations in the two countries are coordinating work on the Great Lakes Water Quality Agreement, a bi-national agreement that addresses not just Great Lakes water quality but also toxic sediment cleanup and ecosystem integrity. The Water Quality Agreement provides a forum to enhance the coordination of protecting and restoring the Great Lakes between our two countries. We address this issue in more depth below.

Question 5. What is the key to keeping together all of the groups involved in the creation of the blueprint strategy in order to implement the goals established by the Collaboration?

Response. The Great Lakes Regional Collaboration must continue to be convened in order that its recommendations can be implemented, modified when appropriated and adapted to new information and science. The Collaboration must also be able

to review progress and report to the American public on the strengths and weaknesses of implementing the 2005 strategy.

It is also critical that the GLRC continue to forward meaningful recommendations that are based on current science and reflect progress that has been made. The GLRC should not be convened just to gather and share information. Instead, it should continue to serve as a forum for what needs to be done to restore and protect the Great Lakes. It should also serve as the clearinghouse for what the restoration priorities should be for each calendar and fiscal year. The GLRC should be able to tell Congress and the public each year what projects and programs are significant towards achieving the goals established through the collaborative effort. The benefit of using the GLRC for priority setting is that it builds a strong political constituency who all agree on specific steps and benchmarks for achieving success. This process also ensures fiscal accountability at every level of government.

There has been a high level of interest and participation among non-governmental organizations throughout the GLRC process. There also needs to be continuing high-level participation from government agencies, both at the Federal, State and local levels. Restoring and protecting the lakes will take time and citizens need to know that its elected leaders are truly invested in achieving the Collaboration's goals. This means Federal agencies investing time in the Interagency Task Force as well as the IATF and the GLRC executive committee—which is made up of state, city and tribal representatives—continuing to make Great Lakes restoration and protection a top priority.

Clearly, a financial commitment by the GLRC to defray the travel costs of GLRC stakeholders would demonstrate interest in keeping the collaboration together. All stakeholders, including the non-governmental organizations, must also have a say in setting the collaboration agenda.

The Healing Our Waters-Great Lakes Coalition holds an annual conference on Great Lakes restoration every year. We are prepared to provide this forum as an in-kind contribution for the GLRC to convene and set next year's Great Lakes restoration and protection priorities.

Question 6. How are the Coalition and the entire Collaboration working with Canada and their restoration activities?

Response. There are existing venues of binational cooperation on Great Lakes issues like the Lakewide Management Plan processes, the Binational Toxics Strategy, and the Great Lakes Water Quality Agreement. Some of these provide roles for non-governmental communities. Nonetheless, working with Canada on the kind of Great Lakes restoration currently being discussed—the. combination of dramatic improvement in the coordination of existing Great Lakes programs with a substantial increase in overall effort—is challenging because U.S. State governors and Members of Congress have put that kind of restoration on the political agenda while the provincial premiers and Canadian Federal legislators to the same extent have not. Thus for the Great Lakes Regional Collaboration (GLRC) and the Healing Our Waters (HOW) Coalition alike, "working with Canada" on restoration requires a degree of unilateral action.

For the Collaboration, working with Canada involved facilitating the presence of Canadian observers, who, unfortunately, preferred not to actively participate. There was perhaps an overvalued deference to existing Great Lakes binational discussion venues where Canada and the United States are on more equal footing. The Collaboration's strategy reflected this lack of participation, generally mentioning Canada only five times in the seventy-page document. The existing venues of binational cooperation noted above constitute the limits of the status quo. HOW hopes that implementation of the Strategy's more comprehensive recommendations is more directive than implied by the Strategy.

For the HOW Coalition, we are working with Canadian environmental non-governmental allies and mid-level officials in an effort to create equal fervor for restoration on both sides of the border. Coalition members rather than the Coalition itself are leading in this work so far. For example, the Alliance for the Great Lakes, Great Lakes United, and the Biodiversity Project are engaged with the Canadian Environmental Law Association over the official review of the Great Lakes Water Quality Agreement (GLWQA). Their intent is to integrate ideas from the new restoration strategy into the potentially powerful, if arguably currently moribund, existing mechanisms provided by the GLWQA.

Great Lakes United also brings together on a routine basis Canadian and U.S. environmental organizations to develop common positions and action plans. The Sierra Club in the United States works in tandem with its Canadian counterpart. The Michigan-based Great Lakes Aquatic Habitat Network and Fund also supports initiatives on both sides of the border. Finally, in order to foster stronger support

among decision-makers, HOW member groups are also conducting valuable Canadian public opinion polling to determine how and why the Canadian public values the Great Lakes and what efforts to protect it they will support. Member groups like Great Lakes United are also educating the Canadian federal and provincial Parliaments on the opportunities and long-term payoffs of enhanced Great Lakes restoration, maintaining full partnership in an enhanced U.S. effort being one of those payoffs.

Clearly, more must be done in working with Canada if U.S. efforts to protect this international treasure will be successful. Accordingly, the Healing Our Waters Coalition recommends that Congress consider:

- Using existing or new processes for binational restoration consultation. Specifically, provide placeholders for Canadian participation in all U.S. Great Lakes programs, when appropriate, with use of such placeholders by Canadian officials conditional on reciprocation.
- Enhancing U.S. Federal support for monitoring and research and requires commonality in data standards between both countries and the most extensive possible binational exploration of research needs in advance of conducting such research.
- Ensuring direct dialogue on Great Lakes needs between United States and Canadian legislators.

STATEMENT OF DIANE KATZ, DIRECTOR OF SCIENCE, ENVIRONMENT, AND TECHNOLOGY POLICY, THE MACKINAC CENTER FOR PUBLIC POLICY

Mr. Chairman and Honorable Senators, good morning. My name is Diane Katz, and I am director of science, environment and technology policy for the Mackinac Center for Public Policy. The Mackinac Center is a Michigan-based, nonpartisan research and educational institute that assists lawmakers, the media and the public in evaluating policy options. I greatly appreciate the opportunity to join this discussion of the Great Lakes Regional Collaboration Strategy.

In the interest of brevity and clarity, I will speak plainly.

Before you is an ambitious Strategy intended to "restore" the Great Lakes ecosystem. Using passionate language, the architects of this Strategy claim that we have "failed to protect" our beloved Great Lakes. Putting aside, for the moment, legitimate differences of opinion about the actual state of the lakes, there is broad agreement that our stewardship of these amazing waters requires significant change. But the shortcomings of the current approach stem not from any lack of regulation or resources, as the Strategy report contends. On the contrary, the problem is the excess of well-intended but ill-conceived programs that fall under disjointed regulatory agencies at the international, Federal, State, provincial and local levels.

Unfortunately, the problem will not be remedied by the Great Lakes Regional Collaboration Strategy, which prescribes more unwieldy and inefficient regulation. As the report states, the Strategy was "developed through an inclusive process aimed at achieving the broadest consensus possible." That means the Strategy is more a product of the political process than the scientific method—just like the existing regime.

Numerous restoration strategies for the lakes have been hatched over the years. Most, if not all, have advocated an expansion of the regulatory state. But we will achieve better results only by applying the most basic truths of good governance that incentives are more powerful than punishment; that sound science yields better results than rhetoric; and, most importantly, that citizens are far better stewards of their property than the State will ever be.

There is no definitive accounting of the billions of dollars allocated for Great Lakes programs. That in itself says a great deal about the status quo. There is also no comprehensive accounting of the numerous Great Lakes programs initiated over the past three decades. To fill this information gap, the Mackinac Center has undertaken a "census" of Great Lakes programs that so far has identified more than 200 Government initiatives. Many lack measurable goals, and there's little of the coordination necessary to maximize environmental improvements.

Rationalizing these myriad programs was the principal task of the eight Strategy teams that crafted the restoration plan. What has materialized instead is a regulatory wish list that is sweeping in scope but limited in scientific and economic rationale. Hopefully, the Executive Committee will pursue meaningful change rather than tinkering at the margins. This would entail identifying for elimination the dozens of redundant, ineffective programs, while also advocating for the restoration of property rights, common law and impartial risk assessment as the foundation of Great Lakes stewardship. The lakes deserve no less.

The Strategy also suffers from internal inconsistency. On the one hand, the report laments the failure of existing programs to adequately protect the Great Lakes. On the other hand, the Strategy calls for greatly expanding the regulatory powers of the very government agencies that the Strategy argues have mismanaged the job. It's time to abandon the command-and-control methods that empowers the environmental bureaucracy.

It is further confounding that implementation of the Strategy is assigned exclusively to Federal cabinet officials, Governors, mayors and American Indian tribal leaders. But successful stewardship requires market-based approaches that rely on private sector input.

The Strategy is also compromised by its underlying supposition that the Great Lakes are teetering on the verge of collapse. According to the report, "Our Great Lakes. . . are succumbing to an irreversible 'invasional meltdown.'"

In fact, water quality has improved dramatically during the past three decades in large measure because of more efficient technologies. As stated in Michigan's 2006 report, Water Quality and Pollution Control, "The open waters of the Great Lakes have good to excellent water quality." Indeed, wildlife is thriving, with hatchery stocks comprising less than 20 percent of the trout population in Lake Superior. Moreover, eagle sightings have soared, while analyses of blood and feathers document a dramatic decrease in PCB concentrations compared to a decade ago. Likewise, trout samples taken from four Great Lakes show an 85 percent drop in PCB concentrations, from a high of more than 20 parts per million (ppm) in the early 1970's to less than 3 ppm more recently. The fall fish survey by the Wisconsin Department of Natural Resources recorded double the number of juvenile perch than the previous record, set in 1989, when the survey was launched. Mercury levels are lower, while lead accumulations have declined in every sample since the 1980's.

Nor has public access to the Great Lakes seriously diminished despite such claims in the Strategy report. Michigan state forests, for example, provide 485 water access sites. The 96 State parks in the Great Lakes State feature a total of 100 boat launches. Two national lakeshores, Pictured Rocks and Sleeping Bear Dunes, span miles of Great Lakes coast.

Missing from the Strategy report is any examination of government's role in exacerbating contamination of the lakes. Agricultural subsidies, for example, have long contributed to excessive use of pesticides, fungicides and herbicides, while water and sewage treatment grants have produced inefficient facilities. In Michigan, more than 45 percent of the cases settled by the water enforcement bureau in the past 15 years involved errant municipalities, as well as counties and other public entities.

The infiltration of non-native species is a legitimate concern. But a lack of comprehensive data has precluded informed decisionmaking on environmental priorities. No basin-wide monitoring currently exists. The U.S. Environmental Protection Agency has largely relied on a shrinking set of indicators to gauge basin conditions.

Many government agencies only collect data on program inputs, not outcomes. We know, for example, that $37 million has been allocated this year for the Drinking Water State Revolving Fund. But there never has been an independent evaluation of program effectiveness, according to the Federal Office of Management and Budget. Similarly, the Pesticide Enforcement Grant Program measures success only by the rate of inspections that result in enforcement action, rather than any actual reduction of pesticide runoff.

The Collaboration Strategy does emphasize a need for "consistent methods to measure and monitor key indicators of the ecosystem's function." All of which would be most welcome. But unless and until we abolish ineffective programs, there isn't likely to be funding available to properly launch new research initiatives.

The waste of resources is rampant. For example, some 88 research vessels operate independently in the Great Lakes, according to the Great Lakes Association of Science Ships. Or consider that the Great Lakes Water Quality Initiative (GLI) targets discharges from point sources despite the fact that non-point sources, such as air depositions and agricultural runoff, are now the greater sources of pollution. Moreover, many of the chemicals regulated under GLI have long been restricted or banned.

The sheer number of proposed regulatory initiatives belies any claim that the Strategy establishes priorities. Science would offer the most reliable guidance for such a task. Unfortunately, a good many of the regulatory goals are as unscientific as they are unrealistic, which undercuts the credibility of the plan. For example, the Strategy calls for preventing "all new introductions" of aquatic invasive species into the Great Lakes, as well as the elimination of "any or all" persistent toxic substances to the ecosystem. But non-native species are an unavoidable fact of nature, as are naturally occurring toxics.

It is also important to recognize that a zero-tolerance mentality toward resource use forecloses the development of environmentally friendly technologies, and in doing so diminishes the wealth creation necessary to further enhance environmental improvements. Well-meaning though it may be, this doesn't make effective policy.

Ideological absolutes also exacerbate the difficulties of negotiating the policy tradeoffs necessitated by limited resources. But even if we were to devote $20 billion more to lakes' protection, as called for in the Strategy, the benefits would not be commensurate with costs. Major pollution sources are now under control and, for the most part, we are left to make marginal improvements that are much harder to achieve. Just as dieters struggle hardest to shed those last unwanted pounds, so, too, does further progress on the environmental front demand more concentrated effort. Now more than ever, then, more effective policy is needed, but the Strategy will only put that further out of reach.

In presenting this critique, it is not my intention to denigrate the efforts of task force members. Their public service is admirable. But meaningful progress in Great Lakes restoration requires more than good intentions. It requires political courage in tandem with the application of sound science and time-tested economic principles. Toward that end, I recommend:

- Eliminating programs that cannot document environmental improvements commensurate with costs.
- A greater reliance on property rights and market-based incentives to revive areas of concern.
- Private-sector involvement in crafting more effective Great Lakes policy.
- Scrutiny of government's role in exacerbating contamination of the lakes.
- Development of a basin-wide data base of ecological conditions with which to set stewardship priorities and determine effective remedies.
- Ongoing measurement of program outcomes, not inputs.

These recommendations spring not from mere ideology alone, although I fervently believe in limited government. These recommendations reflect fundamental principles of governance that have long proven to be the most successful in fulfilling policy goals. Finally, these recommendations are rooted in my summers spent floating in Lake Huron, climbing Lake Michigan dunes, and quenching my thirst with Superior's chilly waters Isle Royale. Such adventures are invaluable to the human spirit, and more effective stewardship will help to ensure that the same opportunities exist for generations to come.

RESPONSE BY DIANE KATZ TO AN ADDITIONAL QUESTION FROM SENATOR INHOFE

Question. Mr. Andy Buchsbaum expressed disagreement with your characterization of the health of the Great Lakes. How do you respond to his criticisms of your statement and what do you believe to be the current state of the Great Lakes?

Response. The question posed by Senator Jeffords to Mr. Buchsbaum was based on a faulty premise. As the hearing transcript shows, the Senator asked Mr. Buchsbaum to explain "the difference between the scientific assessment of the Great Lakes with the view presented by Ms. Katz." In so doing, Senator Jeffords erroneously insinuated that my testimony lacked scientific merit as compared to the opinions offered by Mr. Buchsbaum. That is not the case, as the data below affirms.

Mr. Buchsbaum did not rebut my testimony directly. In fact, he concurred with my overall assessment that water quality has improved, stating: "(A)s Ms. Katz said, water quality is better, there are some indicators that have gone up, some of the Government reports are somewhat favorable."

I hold that Great Lakes water quality has improved overall. Indeed, the U.S. Environmental Protection Agency, which is not prone to optimism, has concluded that, "The Great Lakes have improved tremendously."[1] That is not to say there aren't ecological challenges to overcome. The infiltration of non-native species, for example, is a legitimate concern. But in the absence of basin-wide monitoring and coordinated research, it is difficult to determine the extent of the problem or the most beneficial course of action.

The following facts informed my testimony about the state of the Great Lakes:

- Ten of seventeen United States/Canadian goals for the reduction of Level 1 toxic substances in the lakes have been achieved, and three others will be reached this year.[2] Progress toward the remaining four goals will be well advanced by year's end.

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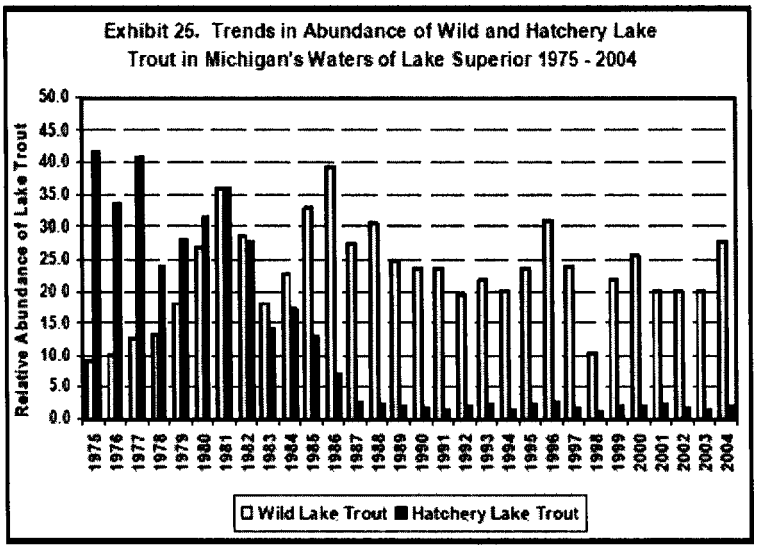
[1] U.S. Environmental Protection Agency, "Great Lakes Ecosystem Report," Great Lakes National Program Office, Washington, DC, January 2001.

[2] U.S. Environmental Protection Agency and Environment Canada, "Great Lakes Binational Toxic Strategy Progress Report 2004," Chicago, IL. *http://binational.net/bns/2004glbts en.pdf*

(The Level 1 toxics include mercury, polychlorinated biphenyls (PCB), dioxins/furans, hexachlorozensene (HCB), benso (a) pyrene (B(a)P), octachlorostyrene (OCS), alkyl-lead, aldrin, dieldrin, mirex, chlordane, toxaphene, and DDT.)

• According to the State of the Great Lakes 2005, "Over the last 30 years, a decrease in the amount of contaminants in the Great Lakes suggests overall improvement. There is a marked reduction in levels of toxic chemicals in air, water, biota and sediments."[3]

• Wild lake trout are abundant in Lake Superior once again. (Lake trout are good indicators of aquatic ecosystem health because of their potential extended life span.) As reported by the Michigan Department of Environmental Quality, "Currently, lake trout populations are nearly rehabilitated in all areas of Michigan's waters of Lake Superior . . . Hatchery lake trout comprise less than 20 percent of lake trout abundance."[4]



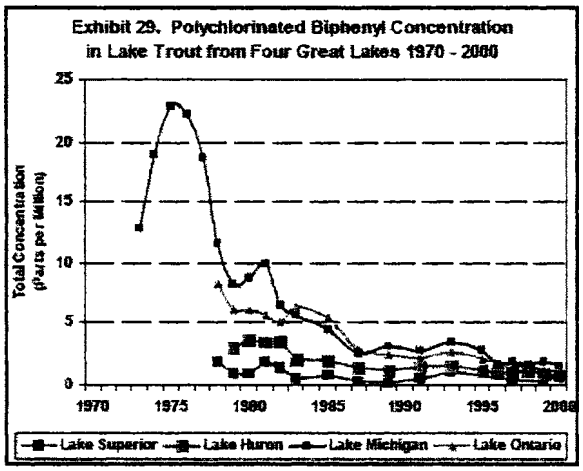
Source: State of Michigan's Environment 2005

• PCB levels in lake trout in the Great Lakes have declined dramatically.[5] PCB levels have also declined in Chinook salmon from Lakes Michigan and Huron, leading to cancellation of the Chinook consumption advisory.

[3] U.S. Environmental Protection Agency and Environment Canada, "State of the Great Lakes 2005," Chicago, IL; Toronto, Ont.

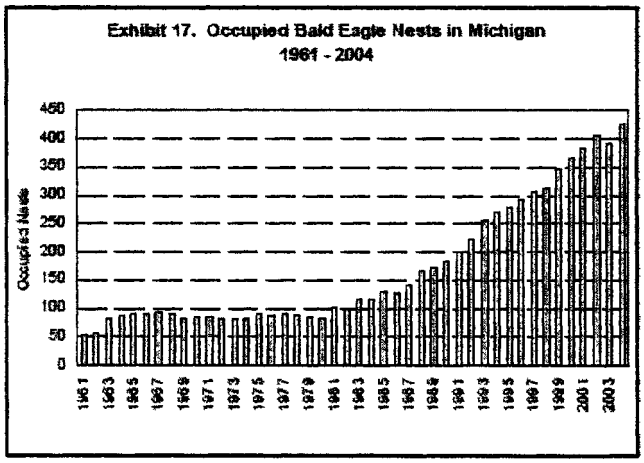
[4] Harrison, K.G. (Ed.), "State of Michigan's Environment 2005: Third Biennial Report," Lansing, MI, January 2006.

[5] Harrison, K.G. (Ed.), *State of Michigan's Environment 2005: Third Biennial Report*, Lansing, MI, January 2006.



Source: State of Michigan's Environment 2005

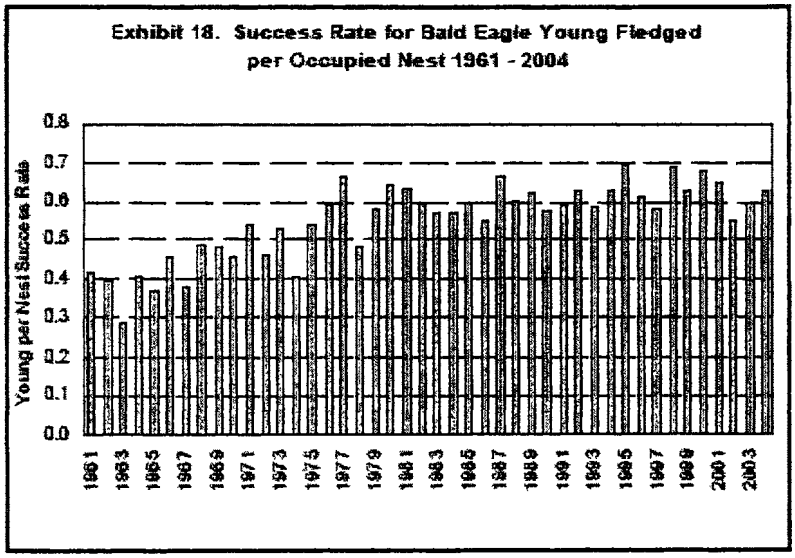
• The bald eagle population has increased from a low of 50 nests in 1961 to 427 in 2004.[6] (The bald eagle is recognized as a useful indicator of environmental health by the International Joint Commission and the U.S. Environmental Protection Agency.)



Source: State of Michigan's Environment 2005

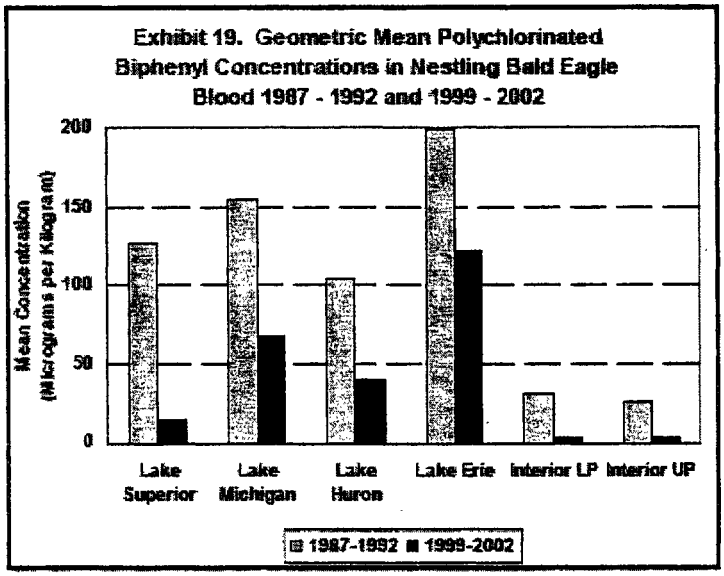
• Bald eagle productivity, measured as the number of young fledged per nest, has increased 50 percent since 1961.

[6] Ibid.



Source: State of Michigan's Environment 2005

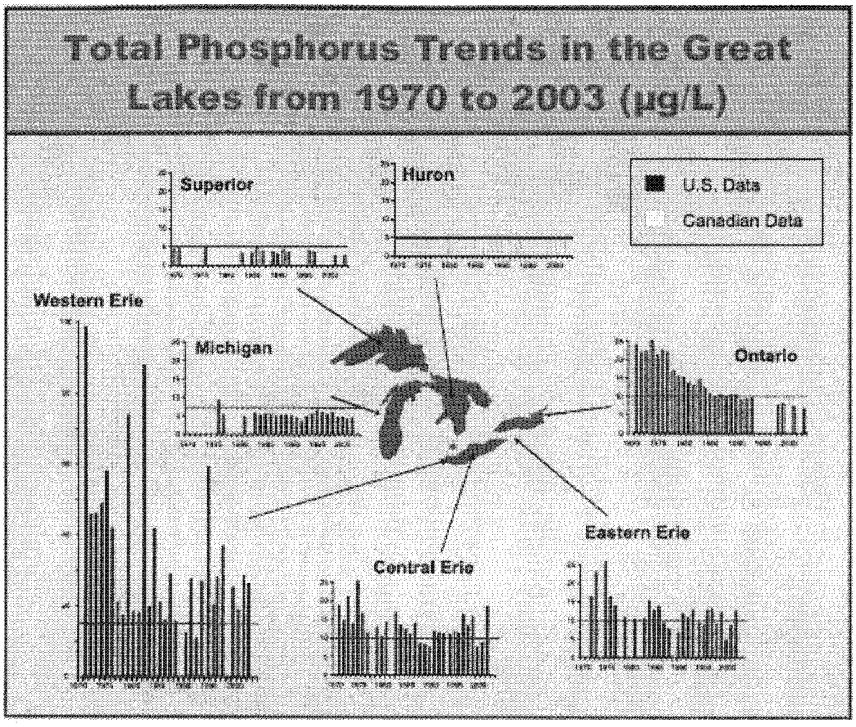
• PCB levels in the blood of bald eagles have fallen "dramatically," according to the Michigan Department of Environmental Quality.[7]



Source: State of Michigan's Environment 2005

[7] Harrison, K.G. (Ed.), *State of Michigan's Environment 2005: Third Biennial Report*, Lansing, MI, January 2006.

• The Environmental Protection Agency reports that "nutrient targets have largely been achieved."[8] The decline in phosphorus has reduced excess algae growth and changed the composition of the algal population.[9] Nuisance algal species have given way to more desirable and historically prevalent species.



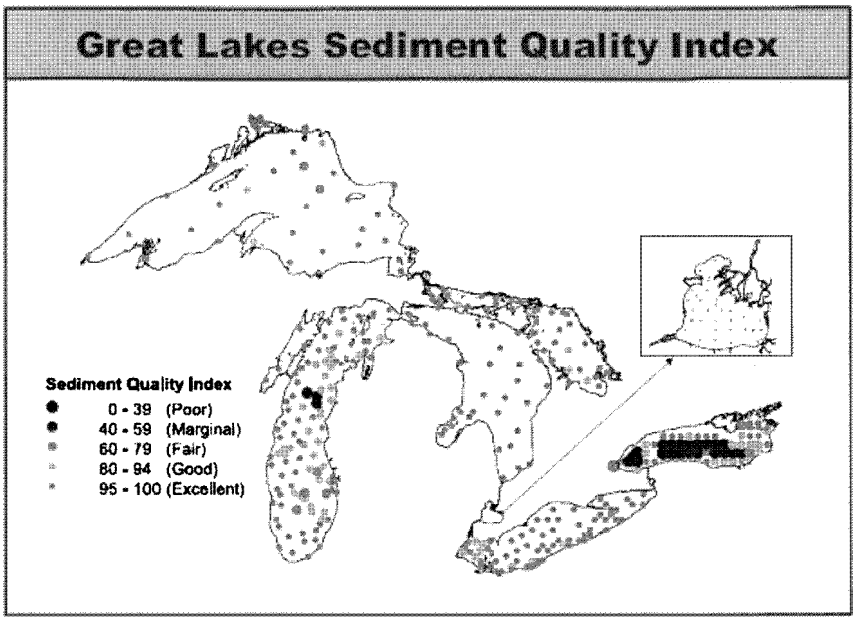
Source: State of the Great Lakes 2005

• Concentrations of PCBs, hexachlorobenzene and mirex in suspended sediments in Lake Ontario and Lake Erie decreased between 38 percent and 74 percent from 1997 to 2000.[10]

[8] U.S. Environmental Protection Agency and Environment Canada, "Great Lakes Binational Toxic Strategy Progress Report 2004," Chicago, IL. *http://binational.net/bns/2004gjbts en.pdf*

[9] U.S. Environmental Protection Agency and Environment Canada, "The Great Lakes: An Environmental Atlas and Resource Book," 1995, Chicago, IL; Toronto, Ont. *http://www.epa.gov/glnpo/atlas/index.html*

[10] Marvin, Christopher H.; Sverko, Ed; Charlton, Murray N.; Thiessen, P.P. Lina; Painter, Scott, "Contaminants Associated with Suspended Sediments in Lakes Erie and Ontario, 1997–2000," Journal of Great Lakes Research, Vol. 30, No. 2, pp. 277–286, International Association for Great Lakes Research, 2004.



Source: *State of the Great Lakes 2005* report

RESPONSE BY DIANE KATZ TO AN ADDITIONAL QUESTION FROM SENATOR JEFFORDS

Question. On what scientific documents and peer reviewed studies do you base your assessment of the state of the Great Lakes ecosystem and the level of risk posed to that ecosystem should restoration actions not be taken?

Response. My most recent assessment of the state of the Great Lakes is based on the documents and studies listed below, as well as dozens of other studies and research documents that I have read and critiqued in the course of my 15 years of researching and reporting on the Great Lakes. Most of my sources are the very regulatory agencies that would assume additional authority and funding should Congress approve the collaboration strategy the Senator advocates.

I did not suggest in my testimony—nor do I believe—that restoration actions should not be taken. Therefore, I have no documents or studies to cite for such a conclusion. Finding fault with the Great Lakes Regional Collaboration Strategy does not mean that I oppose restoration actions. On the contrary, my testimony includes six specific recommendations to improve stewardship of the Great Lakes.

1. Bails, Jack et al., "Prescription for Great Lakes Ecosystem Protection and Restoration (Avoiding the Tipping Point of Irreversible Changes)," December 2005.

2. U.S. Environmental Protection Agency, "Great Lakes Ecosystem Report," Great Lakes National Program Office, Washington, D.C., January 2001.

3. U.S. Environmental Protection Agency and Environment Canada, "Great Lakes Binational Toxic Strategy Progress Report 2004," Chicago, IL.

4. U.S. Environmental Protection Agency and Environment Canada, "State of the Great Lakes 2005," Chicago, IL; Toronto, Ont.

5. U.S. Environmental Protection Agency and Environment Canada, "The Great Lakes: An Environmental Atlas and Resource Book, Chicago, IL; Toronto, Ont., 1995.

6. Marvin, Christopher H. et al., "Contaminants Associated with Suspended Sediments in Lakes Erie and Ontario, 1997–2000," Journal of Great Lakes Research, Vol. 30, No. 2, pp. 277–286, International Association for Great Lakes Research, 2004.

7. Sagoff, Mark, "Do Non-Native Species Threaten the Natural Environment," Journal of Agricultural and Environmental Ethics, Vo. 18, pp. 215–236, 2005.

8. U.S. General Accounting Office, "Great Lakes: An Overall Strategy and Indicators for Measuring Progress Are Needed to Better Achieve Restoration Goals," Washington, DC, April 2003.
9. U.S. General Accounting Office, "Invasive Species: Federal Efforts and State Perspectives on Challenges and National Leadership," Washington, DC, June 2003.
10. U.S. General Accounting Office, "Great Lakes: Organizational Leadership and Restoration Goals Need to be Better Defined for Monitoring Restoration Progress," Washington, DC, September 2004.
11. U.S. General Accounting Office, "Great Lakes Initiative," EPA Needs to Better Ensure the Complete and Consistent Implementation of Water Quality Standards," Washington, DC, July 2005.

RESPONSE BY DIANE KATZ TO AN ADDITIONAL QUESTION FROM SENATOR VOINOVICH

Question. What are your thoughts on S. 208? How would you envision a program to monitor the Lakes?

Response. I regard S. 208 as a well-intended but flawed attempt to improve monitoring of Great Lakes water quality.

This legislation, if enacted, would direct the Great Lakes National Program Office to "develop, implement, monitor and report on indicators of water quality and related environmental factors." Such a delegation of responsibility is ill-advised. The Great Lakes National Program Office already has failed to develop environmental indicators as called for under the Great Lakes Water Quality Agreement. According to a 2003 report by the U.S. General Accounting Office:

> Since our 1988 report on EPA's management, GAO has stressed numerous times that EPA place priority on developing indicators to guide the agency's priority setting, strategic planning, and resource allocation . . . EPA has not initiated or planned an institutional framework with clear lines of responsibility and accountability for developing and using environmental indicators, and no processes, procedures, or work plans exist to link the results of the initiative with EPA's strategic planning and performance reporting cycle.

Moreover, as the GAO stated in a 2004 report, the EPA and its Great Lakes National Program Office (GLNPO) have also failed to lead and coordinate Great Lakes restoration efforts. "This role has never been completely filled by GLNPO because it has not fully exercised its coordination authority," the GAO concluded. "Other organizations have attempted to fill the void."

S. 208 is also problematic because it employs only vague language in dictating the type of indicators and monitoring to be developed by the EPA, i.e. "a set of science-based indicators of water quality and related environmental factors." Such statutory generalities grant too great a degree of discretion to a regulatory agency with a long and troubled history of "mission creep." An explicit statement of monitoring priorities is needed to ensure that legitimate policy goals are achieved.

The authorizations outlined in S. 208 are excessive, particularly in light of the lack of accounting for the billions of dollars appropriated to numerous Great Lakes programs over the past three decades. Funding for the development of indicators and basin-wide monitoring should be generated by eliminating existing programs that cannot document environmental improvements commensurate with costs.

Developing a set of credible and relevant indicators is no easy task. I recommend that Congress first demand an accounting of existing indicator sets and monitoring activities before launching a new initiative. And given the technical and political pitfalls of developing a new monitoring regime, Private researchers would be preferable to government bureaucrats who have already failed to fulfill their responsibilities for monitoring restoration progress.

STATEMENT OF WILLIAM G. HOWLAND, BASIN PROGRAM MANAGER, LAKE CHAMPLAIN BASIN PROGRAM

Chairman Senator Inhofe, Ranking Member Senator Jeffords, distinguished members of the committee, thank you for inviting me here today to testify about The Great Lakes Regional Collaboration Strategy to Restore and Protect the Great Lakes.

I will speak today about the tremendous importance to our Nation of preserving and improving water quality in the Great Lakes and St. Lawrence hydrological system.

Before taking my position managing the Lake Champlain Basin Program nearly 7 years ago, I was a staff scientist in an environmental engineering firm, a member

of the research faculty at McGill University specializing in military geosciences with a doctorate in biophysical remote sensing, and served on the faculty of the University of Vermont and Middlebury College.

I have a working knowledge of the water quality challenges facing large lakes across the Nation. And I appreciate the pressing need for Federal leadership in restoring and sustaining ecosystems that have become impaired through the development of our American society. The Great Lakes represent quite literally the greatest water quality challenge faced by our Nation.

The Lake Champlain Basin Program is a bi-state and international partnership to restore water quality and improve the economy of the Lake Champlain Basin. Our partnership, now in its 15th year, involves the States of Vermont and New York, the Province of Quebec, New England Water Pollution Control Commission, and numerous U.S. Federal Agencies, including the USEPA, the USDA, USDI, and the USACE.

The Lake Champlain Basin Program partners all work to implement a single comprehensive management plan called Opportunities for Action—An Evolving Plan for the Future of the Lake Champlain Basin. Our partnership with Federal agencies is highly effective and through our work to restore our lake ecosystem, we are ensuring a better economic future for citizens of our region. The water quality of Lake Champlain is vitally important to our regional economy, particularly the tourism and recreation economy for which Vermont and the north country of New York are so well known.

Among the lessons learned in our work in the Lake Champlain Basin Program is that two of the greatest problems in our lake—water pollution and invasive aquatic nuisance species—have a key feature in common.

(1) Water pollution due to excess nutrients and toxic substances is far cheaper to avoid and prevent than to clean up after the fact.

(2) The invasion of a lake by aquatic nuisance species introduced from other continents is a catastrophe that is far cheaper to prevent than to cope with after the infestation occurs.

The Great Lakes Regional Collaboration Strategy to Restore and Protect the Great Lakes—being considered by this committee—is a first-rate comprehensive management plan with many similarities to our Opportunities for Action plan for Lake Champlain.

The Great Lakes Regional Collaboration Strategy identifies the key challenges for the Great Lakes, and it provides a clear road map for a collaborative restoration effort. In fact, whether we are talking about Lake Champlain or the truly' Great Lakes—our first order of business is to keep their condition from dramatically worsening during our watch.

Today, water quality in many near-shore areas of the Great Lakes is in a virtual free-fall, and the Nation needs this committee to intervene with a program to turn aside some very troubling trends. Present trends are heading toward: drinking water that is a serious health risk for tens of millions of Americans; burgeoning numbers of invasive aquatic nuisance species; and ecosystem impairments that, if left unchecked, will take centuries and untold billions of dollars to remedy.

The Great Lakes Regional Collaboration Strategy is an action plan that clearly addresses the most pressing lake stewardship needs. Senate bill S. 508 provides a multi-state, multi-agency collaborative leadership of the sort that has a proven track record in Lake Champlain, and mandates the kind of interagency cooperation that we have found essential for success.

The Lake Champlain Basin Program, established by Congress in the "Lake Champlain Special Designation Act of 1990," and further authorized in the "Daniel Patrick Moynihan Great Lakes and Lake Champlain Act of 2002" has created our active Federal, State and local agency collaboration. S. 508 establishes a similar collaboration that will generate measurable in-the-water results to get this job done.

The common interests of Lake Champlain and the Great Lakes should be no surprise, especially concerning invasive nuisance species management, because both Lake Champlain and Lake Ontario empty into the St. Lawrence River. Lake Champlain is drained to the north by the Richelieu River into the St. Lawrence, which also is the outlet river for Lake Ontario.

There is also a second water connection where the southern part of Lake Champlain and the Great Lakes are connected by the New York Canal System and the Hudson River. One can travel by boat from Chicago, IL to Burlington, VT, using either route. These two connections are used by many recreational boaters.

Unfortunately, these two waterway connections also have been used for decades by invading nuisance species. Zebra mussels, native to Europe, were introduced to the Great Lakes by the dumping of contaminated shipping ballast waters. Then,

they invaded Lake Champlain by way of the Erie Canal, the Hudson River, and the Champlain Canal. Now zebra mussels are established throughout Lake Champlain.

This invasion route was also used by white perch, which is rapidly displacing our native yellow perch. Gizzard shad, blue-back herring, faucet snail, globe siltsnail, purple loosestrife, yellow floating heart, and the infamous water chestnut, also have invaded our lake. Of the 48 invasive aquatic species in the Lake Champlain Basin, 13 species have entered Lake Champlain from the Great Lakes by way of the canals, and the rate of new arrivals is increasing. We applaud the recognition in The Great Lakes Regional Collaboration Strategy of the need to examine the costs and benefits of techniques to intercept the passage of invasive species through the Champlain Canal system.

There are now more than 160 invasive aquatic species plaguing the Great Lakes watershed. We face a critical and immediate need to tighten our Nation's control of ballast water management by ships transiting the St. Lawrence River, or this problem will go from very bad to even worse. These ships are the primary sources and vectors of invasive aquatic nuisance species in the Great Lakes and this critical problem is clearly presented in the The Great Lakes Regional Collaboration Strategy.

Over the past 15 years, and with continuing Federal funding, the Lake Champlain Basin Program has issued nearly 600 research, monitoring and plan implementation contracts. Last year we introduced a new Ecosystem Indicators program to characterize the pressures on our lake water quality, to better measure the current state of this resource, and to guide our adaptive management response.

While Lake Champlain is only 120 miles long, I believe that our 15-year management and research experience is of real and immediate value to the management collaborative dealing with the Great Lakes system. My point here is that we all achieve a better bang for the buck if we share the lake-management science both our systems require.

To that end, the Lake Champlain Basin Program stands ready to share the lake management experiences of our smaller system in all aspects of plan implementation, research, ecosystem indicators, monitoring, education and outreach. We also acknowledge the great benefit to us that would accrue from increased cooperative linkages with the Great Lakes restoration efforts.

We have had success in the Lake Champlain Basin in reversing the nutrient trends to reduce phosphorus in several major tributaries, we have successfully removed PCB-contaminated sediments and reclaimed Cumberland Bay, and we have effectively controlled water chestnut infestations in the southern part of Lake Champlain. We have established a well-coordinated program to monitor for blue-green algae toxins and to alert State and provincial agencies when human health risks occur. Whether modeling the effects of excess nutrients, the impact of invasive species, the persistence of toxins, or conducting trials of restoration strategies, the Lake Champlain Basin can be an ideal proving ground for Great Lakes management initiatives. This would allow more effective designs for the much larger Great Lakes watersheds.

The challenges facing Lake Champlain and the Great Lakes are so similar, that a more collaborative approach to sharing the science and management experience that we both need is cost-effective and good common sense. We would welcome any opportunity to participate in an Advisory or Observer role envisaged by S. 508, and offer appropriate reciprocity.

America today faces unprecedented challenges of ecosystem damage and resultant declines in water quality, contaminated and weed-infested waterways, and polluted lakes and estuaries across the Nation. Nowhere is there more at stake than in the Great Lakes, which contain 20 percent of the fresh surface water on the planet, and 90 percent of the fresh surface water of the Nation.

Our cultural habits have compromised drinking water supplies for millions of Americans, caused desperate struggles for survival in the tourism and recreation industries, and created an alarming trend toward more and greater problems in the near future.

Short-funding the stewardship of our surface waters, whether in Lake Champlain or in the much larger Great Lakes, is surely no way to save money. With each passing year, water pollution and invasive species problems get far more costly, not less costly. The most cost-effective solution to ensure the future of the Great Lakes is to invest adequately in their restoration, including the toughening of ballast water controls, at the earliest possible date. Any alternative is likely to be a false economy in the short term and result in a burgeoning burden of additional accrued contamination and sharply increased costs of restoration in the long term.

Finally, the work of environmental restoration is not only about conservation philosophy or environmental ethics. As we know so well in the northeast, it is about

the vitality of towns and cities, and the vigor of the recreation economy and quality of life for hundreds of shoreline communities large and small. It is also about our Nation's economic engines. It is about ample clean water for industry, and clean effluent from industry. It is about trucks on the highway, the pulse of commerce and trade. It is about smell and safety of tap water for some 40 million people in the cities of America's heartland.

I thank the committee for taking on this high priority challenge. I thank you also for the invitation to testify and I look forward to answering your questions.

[Exhibits provided: Opportunities for Action—An Evolving Plan for the Future of the Lake Champlain Basin and (2) State of the Lake—Lake Champlain in 2005, A Snapshot for Citizens are retained in the committee's file.]

Embassy of Canada  Ambassade du Canada

501 Pennsylvania Avenue, NW
Washington, DC 20001

March 15, 2006

The Honourable George V. Voinovich
United States Senate
Committee on Environment and Public Works
410 Senate Dirksen Office Building
Washington, DC 20510

Dear Senator Voinovich,

I understand that the Senate Environment and Public Works Committee will hold a hearing on the Great Lakes on March 16, 2006. I would like to thank you for your interest in the Great Lakes, which are very important to Canada and the millions of Canadians for whom they are the principal source of drinking water. We have worked hard, both domestically and in cooperation with the United States, to achieve the shared objectives outlined in the Great Lakes Water Quality Agreement (GLWQA). Within Canada, we have completely cleaned up two Areas of Concern, and are nearing completion of the others on the Canadian side.

In view of the different approaches taken by our countries to achieve shared objectives, and the interest you have shown, I would like to bring to your attention to the attached statement. This document outlines Canada's approach to the Great Lakes, both domestic (in cooperation with the Province of Ontario) and bilateral (with the United States through the GLWQA). I respectfully request that my letter and the statement be included in the hearing record.

Yours sincerely,

Jon Allen
Minister, Political Affairs
Canadian Embassy

Canada

.../2

March 16, 2006

WRITTEN SUBMISSION
THE GOVERNMENT OF CANADA
TO THE U.S. SENATE ENVIRONMENT & PUBLIC WORKS COMMITTEE
REGARDING
THE GREAT LAKES

INTRODUCTION

Water is a critical component of the environmental, cultural, social, and economic landscape. Canada holds 20% of the world's freshwater, 25% of global wetlands, and a wealth of aquatic biodiversity. Canada's healthy watersheds provide services, such as water filtration and flood management. Canada's hydroelectricity constitutes 59% of the gross energy generation. The agriculture and agri-food industry is worth 8.3% of the GDP. Recreational activities such as swimming, beach use, boating, and fishing allow Canadians to experience the beauty of the lakes, rivers and other coastal areas. A significant portion of the $12 billion that nature-based tourism and recreation contribute to the Canadian GDP results from activities that depend on clean, abundant water.

Containing approximately one fifth of the world's total fresh surface water, the Great Lakes basin is the largest fresh water ecosystem on the planet. 8.5 million Canadians take their drinking water from the Great Lakes and another 3 million living downstream drink the water of the St. Lawrence River. Further downstream the quality and quantity of fresh water entering the Gulf of the St. Lawrence has a significant influence on that estuary ecosystem.

The waters of the Great Lakes do not recognize political boundaries. In the Great Lakes Basin ecosystem, environmental problems in one jurisdiction can have significant effects on other areas in the system and on the environmental quality of the Great Lakes and the downstream reaches of the St. Lawrence River and Gulf.

The Government of Canada is committed to effective water resource management and in this context recognizes the significant contribution made by the Canada-United States Great Lakes Water Quality Agreement.

CANADA-UNITED STATES PARTNERSHIP

The Canada-U.S. partnership in the Great Lakes draws strength from a very simple reality: two nations, one shared ecosystem and the recognition that the protection of the waters of the Great Lakes is vital for the health and economic prosperity of citizens on both sides of the border.

Canada and the U.S. share a long history of effective cooperation on water-related environmental issues that stretches back almost a century. The Boundary Waters Treaty (1909) set the pattern of Canada-U.S. environmental relations by establishing the principle of joint stewardship of the rivers and lakes that lie along or flow across the Canada-U.S. border.

In the Great Lakes, the framework for binational partnership was further enhanced in 1972 with the signing by Canada and the U.S. of the first Great Lakes Water Quality Agreement. The Agreement marked a commitment from both countries to restore and protect the Great Lakes basin ecosystem. It created the shared vision for binational cooperation and coordination and articulated that both Canada and the U.S. are working towards achieving the same goals.

The Agreement also established a clear decision-making and accountability framework. This framework facilitates joint study by Canadian and American experts drawn from government, industry and academia. This process of joint study enables the Parties to investigate and reach agreement on the facts of an issue. More importantly, it serves to develop a solid foundation upon which governments on both sides of the border can work jointly at developing practical and pragmatic solutions.

The Governments of Canada and the U.S. have established the Binational Executive Committee (BEC), which is comprised of senior level representatives from Canadian and U.S. federal, state and provincial agencies that are responsible for delivering environmental and natural resource programs in the Great Lakes basin ecosystem. The BEC has been instrumental in coordinating and managing Great Lakes programs on a binational basis. The BEC meets twice a year and its work includes: setting priorities and strategic direction for binational programming in the Great Lakes; coordinating binational programs and activities; responding to new and emerging issues in the Great Lakes, including tasking existing or creating new working groups to undertake designated activities; providing input on the evaluation of progress under the Great Lakes Water Quality Agreement; and providing advice, comment or other input for the preparation of various binational reports.

BEC manages a number of programs, including: Binational Areas of Concern (AOCs); Lakewide Management Plans (LaMPs); the Binational Toxics Strategy (BTS); the Integrated Atmospheric Deposition Network (IADN); cooperative monitoring; and the State of the Lakes Ecosystem Conference (SOLEC) and reporting. These and other existing binational mechanisms under the Great Lakes Water Quality Agreement allow both countries to maximize their investments, resulting in an improvement of environmental quality of the Great Lakes.

The overall contaminant picture in the Great Lakes has dramatically improved, with significant declines in overall concentrations of most critical contaminants. Some bird species, such as the bald eagle and peregrine falcon, are returning to the Great Lakes basin. Fish communities are improving, with species such as the Lake Trout showing signs of recovery in most of the Great Lakes.

However we recognize that there remain significant challenges. There a number of chemicals of emerging concern, such as fire retardants and certain pharmaceuticals which when released into

the environment have resulted in deformities in the reproductive systems of fish and frogs. Some species such as the black tern and the American coot are declining, largely because of the loss of wetlands and other important habitat. A significant proportion of fish are still contaminated enough that they should be eaten in limited amounts or not at all. Climate change and the ongoing inadvertent introduction of invasive species into the lakes continue to pose long term threats to the Great Lakes Basin ecosystem.

CANADIAN MANAGEMENT

The objectives provided by the Great Lakes Water Quality Agreement are clearly reflected in the Canadian Great Lakes Program. The Canadian Program is a highly partnered, horizontal program that coordinates Canadian activities and those joint activities undertaken with the provincial government, and U.S. federal and state agencies.

The Canada-Ontario Agreement respecting the Great Lakes Basin Ecosystem (COA), first signed in 1971, facilitates the efforts between the Governments of Canada and Ontario. The current COA renews and strengthens planning, cooperation and coordination between federal and provincial departments. COA places an emphasis on four priorities: restoration of Areas of Concern, reduction of harmful pollutants, improvement of lakewide management, and improvement of monitoring and information management.

Under this domestic framework, the Governments of Canada and Ontario have made significant progress including delisting two Areas of Concern (AOCs) identified under the Great Lakes Water Quality Agreement: Collingwood Harbour in 1984 and Severn Sound in 2003. Of the remaining ten AOCs entirely on the Canadian side, actions required to restore the Spanish Harbour AOC have been completed and ecosystem recovery is being monitored prior to delisting, and work is nearing completion in six other areas.

CONCLUSION

The Government of Canada applauds U.S. efforts on the Great Lakes Regional Collaboration. However, as we continue to take action on each side of the border, we must remember that the protection of the Great Lakes does not stop at national boundaries, and that we must continue to use existing binational mechanisms to work together

A common vision for the ecosystem, as provided in the Great Lakes Water Quality Agreement leads to positive results on both sides of the border. The Great Lakes Water Quality Agreement provides for information sharing, and cooperative research and monitoring. With this basis of sound science common goals and priorities can be established to direct both domestic programs and binational cooperation for the protection of the tremendous resource which is the Great Lakes Basin ecosystem.

Canada believes it is critical that the importance of binational collaboration be recognized in

restoration plans in Canada and the U.S., and in any new initiatives. With the upcoming review of the Great Lakes Water Quality Agreement, the Governments of Canada and the U.S., together with States, Provinces, local governments, tribes, First Nations and community partners, have an opportunity to examine our progress under the Agreement and to continue to build on the strengths of our existing binational vision and framework of cooperation, collaboration and coordination. We look forward to working with the U.S. on the review of the Great Lakes Water Quality Agreement to ensure that it remains a visionary statement to guide governments on both sides of the border.

March 10, 2006

The Honorable George V. Voinovich
Hart Building 524
Washington, D.C., 20510

Dear Senator Voinovich:

Thank you for your leadership in our shared efforts to restore and protect the Great Lakes. This objective is of vital national interest to the United States. The Great Lakes are a national treasure constituting the largest surface freshwater system in the world. More than 35 million Americans receive the benefits of drinking water, food, a place to work and live, recreational opportunities and transportation from the Great Lakes. Our national economy depends on the Great Lakes. Nearly 29% of our nation's gross domestic product (GDP) is produced by the Great Lakes States, which includes approximately 60% of all U.S. manufacturing.

Unfortunately, there are threats to the Great Lakes Basin now and they promise to increase in the future. As the result of a year-long process initiated by President Bush through an Executive Order, the Great Lakes Governors and Mayors recently joined with representatives of the Administration, Congress, and Tribes to unveil a Strategy to restore and protect the Great Lakes. Over 1500 governmental and non-governmental stakeholders worked together to create this Strategy, resulting in its broad-based support. The Governors' and Mayors' goal is now to secure large-scale, long-term funding to implement the Strategy's recommendations and to enact management reforms to ensure that resources are efficiently used to address our highest-priority needs.

As the President noted in his Executive Order, "...over 140 Federal programs help fund and implement environmental restoration and management activities throughout the Great Lakes system." But, too frequently and despite best efforts, these Federal programs are poorly coordinated and inadequately focused on agreed-upon priorities. The Executive Order sought to improve coordination by creating the Great Lakes Interagency Task Force. Although further progress is needed, we support Congressional action to codify the Executive Order and institutionalize the Great Lakes Interagency Task Force. More generally, we support a sustained, outcome-oriented collaborative process to more effectively consolidate Federal resources.

In addition, we believe that alternative resource delivery mechanisms should be pursued over the long term to ensure the greatest return on our investments. An annual appropriation toward this end should be directed to support Great Lakes restoration and protection efforts as envisioned under S 508, "The Great Lakes Environmental Restoration Act," and HR 792, "Great Lakes Restoration Act of 2005." Furthermore, spending priorities should be determined at the State and local level using the Strategy as a guide. We applaud the bills' sponsors and cosponsors and join their call to provide long-term, large scale funding through a reformed process.

As we work together to implement these long-term reforms, we also recognize that specific actions can and must be taken in the interim to advance the Strategy. Therefore, on December 12, 2005, we asked the President to support a series of broadly-supported near-term actions to protect and restore the Great Lakes. A copy of the letter is attached. These proposed actions were developed in consultation with members of Congress and Tribal representatives. All of the near-term action items contained in our letter to the President are of vital importance. Action is needed now to finally achieve significant improvements on these well documented and widely supported recommendations. Some of these requested actions have been stalled in debate for far too long:

- Authorizing the U.S. Army Corps of Engineers to complete and operate two permanent dispersal barriers in the Chicago Sanitary and Ship Canal; and, appropriating $6 million to implement this action in order to prevent the Asian carp and other invasive species from entering the Great Lakes. This investment is a fraction of the value of the Great Lakes fishery.

- Achieving broader protection against the introduction and spread of aquatic invasive species through congressional passage of the National Aquatic Invasive Species Act, as reflected in SB 770 and HR 1591 and HR 1592.

- Supporting the President's request for the Great Lakes Legacy Act to be funded at $49.6 million– if not the full $54 million authorized level.

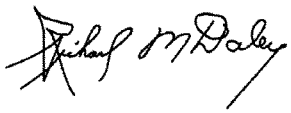
- Supporting the President's commitment to begin work to restore 200,000 acres of wetlands in the Great Lakes Basin by appropriating $28.5 million to begin restoration work immediately. The States remain committed to working with other non-federal partners to provide an additional $28.5 million cost-share toward this end. To ensure these resources are used efficiently, we also ask that you join us in encouraging the Great Lakes Federal Interagency Task Force to review all federal agencies' wetland management programs to develop a consolidated wetlands restoration and protection approach.

- Appropriating $50 million in additional funding for USEPA's brownfield grant program. These funds should be used for remediation projects in shoreline communities.

We also want to ensure that existing and proven core programs, such as the Clean Water State Revolving Loan Fund; the Coastal Zone Management Program; and, the Great Lakes Fishery Commission's Sea Lamprey control program are funded at fully authorized levels. Continuing programs like these is critical to maintaining the gains made through past investments.

The time for planning has ended and the time for action has begun. We look forward to working with you as we take that action. Should you or your staff have any questions, our staff contacts are David Naftzger, Executive Director of the Council of Great Lakes Governors at (312) 407-0177 and David Ullrich, Executive Director of the Great Lakes and St. Lawrence Cities Initiative at (312) 201-4516.

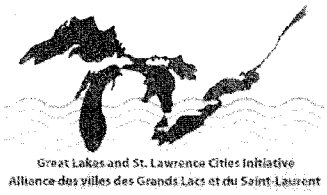
Sincerely,



The Honorable Jim Doyle
Governor of Wisconsin
Chair, Council of Great Lakes Governors

The Honorable Richard M. Daley
Mayor, City of Chicago
Chair, Great Lakes and St. Lawrence Cities Initiative

Attachment



December 12, 2005

The Honorable George W. Bush
The White House
1600 Pennsylvania Avenue NW
Washington, D.C.

Dear President Bush:

Again, thank you for your continued leadership in our shared efforts to protect and restore the Great Lakes. As a direct result of your Executive Order creating a federal Great Lakes Interagency Task Force and promoting a regional collaboration of national significance, we have made significant strides that could help to protect this national treasure.

We are pleased that, thanks to the dedicated efforts of more than 1500 stakeholders and experts from across the region, we now have a comprehensive assessment of Great Lakes restoration and protection needs. We also have a clear set of consensus recommendations for meeting these needs. And, the Collaboration's recommendations illustrate that some of these needs can only be addressed through new or additional resources at the federal, state, tribal or local levels.

As we stated in our November 1 letter, we share the goal of accomplishing greater results with existing resources. We also share the overwhelming view of our Collaboration partners that federal resources must be increased in the FY2007 budget to better restore and protect Great Lakes.

Please find attached a proposed list of near-term action items that, if implemented, could substantially improve our long-term ability to protect and restore the Great Lakes. This list has been developed by our region's Governors and Mayors in consultation with members of the Great Lakes Congressional Task Force and representatives of Great Lakes Tribes.

Serious problems continue to negatively impact the region's health and welfare. The ecological stability of these unique world class resources and the strength of this nation's economy cannot be resolved by maintaining the status quo. We must make additional

investments in the short term and build on these commitments over time. Above all, we agree that there will be an ongoing need to continue working together.

Your Executive Order has helped to bring us together as never before. We have renewed our region's optimism and believe that we can work together to overcome our shared challenges. We ask that you help us deliver on the promise of our shared efforts by partnering to support these near-term actions. We look forward to a continued dialogue with you and your staff to move these ideas into action.

We would ask that a meeting be scheduled among our staff and yours in order to develop a workplan toward our shared goals. Our staff contacts are David Naftzger, Executive Director of the Council of Great Lakes Governors, at (312) 407-0177 and David Ullrich, Executive Director of the Great Lakes and St. Lawrence Cities Initiative at (312) 201-4516.

Sincerely,

Jim Doyle Bob Taft Richard M Daley

Governor Doyle Co-Chair Council of Great Lakes Governors	Governor Taft Co-Chair Council of Great Lakes Governors	Mayor Daley Chair Great Lakes and St. Lawrence Cities Initiative

Great Lakes Regional Collaboration
Near Term Action Items

Invasive Species

Invasive species pose one of the most serious threats to the stability of the Great Lakes ecosystem. An average of one new species is discovered in the Great Lakes ecosystem every eight months, and once present, eradication is impossible. Prevention is vital to stemming ecosystem impacts from the introduction of new invasive species.

Federal: The federal government must move swiftly under its existing authorities to require improvement for ballast water management, including practices for those ships declaring no ballast on board, to forestall the introduction of new invasive species to the Great Lakes.

We ask that injurious carp species be listed under the Lacey Act.

Congress should pass and the President should sign the National Aquatic Invasive Species Act (Senate Bill 770/HR 1591 and 1592). Enactment of NAISA is one of the key legislative objectives of the Great Lakes Regional Collaboration. Passage of comprehensive federal legislation such as NAISA would address many of the key recommendations developed by the participants in the Collaboration, and is critical to our overall restoration goals. The bill should include:

- $8 million for Great Lakes state-specific management plans. It is vital that these funds be distributed to the States and Tribes to implement existing plans approved by FWS.

- $11.25 million to prevent introduction of AIS by vessels (includes $6 million to USCG Sec 1101, $2.5 million to EPA Sec 1101, $2.75 million to Task Force Sec 1101).

- $6 million to the US Army Corps of Engineers to complete and operate permanent dispersal barriers in the Chicago Sanitary and Ship Canal.

- $1 million for model regional, state, and local rapid response contingency strategies.

State/Tribe/Local: The States will continue to implement state-specific plans, approved under the Non-indigenous Aquatic Nuisance Prevention and Control Act, to prevent and control invasive species. Tribes will also implement control measures within areas of their authority. States, Cities and Tribes will implement

educational and regulatory efforts relative to invasive species targeted to those entities whose activities are most likely to pose a risk of AIS introductions.

The States estimate that they are devoting more than $3.5 million annually to the control and prevention of invasive species in the Great Lakes. Industry and municipalities in the Great Lakes basin spend roughly $70 million annually on removing zebra mussels from water intakes.

Coastal Health

Elimination of sewage overflows to the Great Lakes and their tributaries is a region-wide need and the most direct means of improving coastal health. Beach closures are one of the most obvious markers of degraded coastal conditions

Federal: CSOs and SSOs are the greatest impediment to improving coastal health. The federal government, in cooperation with the States, should ensure that all CSO/SSO communities have completed a long-term control plan (LTCP) within the next five years and are making adequate progress in implementing it.

The cost of correcting CSOs and SSOs is burdensome to local communities and to the ratepayers who support their wastewater infrastructure. We ask that Congress provide a total of $50 million in the FFY 2007 budget to provide interest rate subsidies or other forms of assistance for CSO/SSO projects in the Great Lakes basin. The Council of Environmental Infrastructure Financing Authorities supports interest rate subsidies over direct grant funds.

The Collaboration asks that an additional $2 million be provided under the Beach Act to enable Great Lakes States and Tribes to standardize, trial, and implement a risk-based approach to beach/coastal assessment. Beyond that, we seek to maintain current funding levels: $1.75 million for the Great Lakes States and $50,000 for eligible tribes.

State/Tribe/Local: We note that SRFs include a state match requirement, and that local governments will incur billions of dollars in costs to address CSOs and improve infrastructure.

Areas of Concern

Passage of the Legacy Act provided for the first time a dedicated source of funding for remediation of contaminated sediments in the Areas of Concern. However, appropriations have never reached authorized levels.

Federal: The Collaboration asks that the FFY 2007 budget contain the authorized funding level of $54 million, an increase of $24 million over the current appropriation. Congress should reauthorize the Legacy Act and include in it the

provisions recommended by the Collaboration to make use of the Act's funding more efficient and effective.

Restoration of the AOCs is necessarily driven at the local level, through plans developed by States, Tribes, local officials, and concerned citizens. Unless this capacity is nurtured at the local level, progress on AOC restoration will be limited. While States and NGOs have continued to support Remedial Action Plan groups, federal support has dwindled, with negative effect. The Collaboration requests that $10 million be appropriated to support state and local AOC/RAP programs in the Great Lakes States, an increase of $8 million over the current appropriation. and that GLNPO receive $1.7 million for program administration, of which $1.2 million exceeds the current appropriation.

State/Tribe/Local: The Collaboration notes that all Legacy Act projects require a non-federal cost share, to which States and local governments often contribute. For example, Ohio is prepared to contribute $7 million to the Ashtabula River project currently under consideration for Legacy Act funding.

The States will take the lead on the establishment of a State-Federal-Local-Tribal coordinating Committee.

Toxic Pollutants

Progress in protecting and restoring the Great Lakes will only be achieved and maintained to the extent that the introduction of toxic pollutants is controlled. While certain persistent toxic substances (PTS) have been significantly reduced in the Great Lakes Basin ecosystem over the past 30 years, they continue to be present at levels that pose threats to human and wildlife health and warrant fish consumption advisories in all five lakes. More recently, researchers have documented the presence of additional chemicals of emerging concern that may also pose threats to the Great Lakes.

Federal: The federal government should restate its commitment to implement the Great Lakes Bi-national Toxics Strategy, and should evaluate its implementation schedule for opportunities to accelerate its efforts.

We ask that the FFY 2007 budget include an additional $2 million to be distributed to the States to expand the toxics reduction program in the Great Lakes Initiative.

The Administration and Congress are asked to provide $1 million in FFY 2007 in ongoing funds to support the continuation of tribal fish tissue contaminant analysis programs and related community education programs. Congress is asked to appropriate an additional $100,000 in the FFY 2007 budget to facilitate tribal participation in the mercury stewardship program described below.

Emerging chemicals of concern are little understood, but pose a potentially serious threat to aquatic life and wildlife in the basin. The Collaboration asks that Congress provide $100,000 for monitoring of these new chemical contaminants.

State/Tribe/Local: States,Tribes, and local governments recognize that much of the work to reduce toxic pollutant loading into the Great Lakes will necessarily occur at the local level. The Great Lakes and St. Lawrence Cities Initiative will work with tribes and others on toxic reduction efforts, including such things as household hazardous waste collections, pesticides and fertilizer use reduction, and mercury product and waste collections.

The Great Lakes States, Cities and Tribes will develop a basin-wide mercury product stewardship strategy, aimed at managing mercury wastes and reducing the use of mercury-containing products. The Great Lakes Pollution Prevention Roundtable will lead this effort.

States, Tribes and municipalities will identify garbage burning practices in their jurisdictions and through education and regulation seek to reduce the incidence of this practice, which is the primary source of dioxins and furans into the Great Lakes ecosystem.

The Collaboration recognizes the need to protect human health through consistent and easily accessible messages on fish consumption. The States and Tribes will improve their fish consumption advisory programs, particularly regarding sensitive populations such as tribal communities.

Habitat and Species

Preservation of the diversity of species in the Great Lakes basin can be significantly advanced through protection and restoration of wetlands and restoration of the Great Lakes tributaries. These activities are also key to the full implementation of international agreements on management of migratory birds and of the Great Lake fisheries resources.

Federal: The Collaboration asks that the FFY 2007 budget provide $28.5 million to existing Fish and Wildlife Service programs to restore 100,000 acres of wetlands, toward the Collaboration goal of eventual restoration of 550,000 acres. States, Tribes, local governments and NGOs would raise an additional $28.5 million in non-federal matching funds.

To maximize the use of existing funding for wetlands protection and restoration, the Collaboration proposes that the Federal Interagency Task Force review all federal agencies' wetland management programs and develop a consolidated approach.

Because Great Lakes tributaries are key spawning and nursery areas for

Great Lakes fish populations, species recovery plans are dependent on protecting existing high quality tributaries and restoring other tributaries with the potential to support targeted species. These activities are site-specific, based on watershed hydrologic and physical habitat needs. The Collaboration has set a near-term protection and restoration goal of ten tributary streams. We ask that Congress pass the Great Lakes River Restoration Act and appropriate $40 million in the FFY 2007 budget for Fish and Wildlife Service programs to be directed to key tributary stream restorations.

State/Tribe/Local: The Collaboration recognizes the importance of preserving existing wetlands, and recommends that each State review its existing wetland management programs to determine (1) their effectiveness in preserving existing high-quality wetlands in the basin and (2) the success of mitigation projects in the basin. States, Tribes, and local governments will continue to use existing authorities to preserve wetlands, in particular high quality wetlands in the near shore areas of the Great Lakes.

As noted above, States, Tribes, local governments and NGOs would raise an additional $28.5 million in non-federal matching funds to achieve the target of restoring 100,000 acres of wetlands in FFY 2007 and an additional $10 million in non-federal match for tributary restoration.

Nonpoint source pollution

Nonpoint source impacts vary greatly in frequency and severity across the Great Lakes. Impacts have been particularly severe in the coastal wetlands and tributaries that once buffered the Lakes from environmental damage.

Federal: Although there are existing programs to deal with sedimentation and nutrient enrichment, the current needs outstrip existing program capacity. The Collaboration asks that the FFY 2007 budget include an additional $66 million to increase enrollment in buffer strip programs.

Urban streams are particularly vulnerable to nonpoint source pollution impacts. The Collaboration asks that Congress appropriate $18 million in the FFY 2007 budget for hydrology improvement projects in urbanized areas where runoff from development and the associated impairments directly affect natural waterways and their confluence with the Great Lakes or connecting waters.

State/Tribe/Local: The States estimated their spending on nonpoint source pollution control programs at nearly $1.4 million annually in 2004.

Indicators and Information

Accountability demands that the Great Lakes restoration effort be able to determine baseline conditions and assess the results of restoration projects and investments. In addition, the capacity to assess trends is needed to observe long term change and detect the emergence of new issues (e.g. new exotic species).

Federal: The SOLEC process to develop indicators should be completed for a full suite of 80 indicators, with particular attention to the use of indicators that will measure the success of the measures recommended in this Strategy. The Collaboration asks that $800,000 be provided in the FFY 2007 budget toward this end. A "top ten" list of indicators should be developed and reported to the public on an annual basis.

The Federal Interagency Task Force should review monitoring programs among its member agencies to ensure effective and efficient gathering and reporting of data, and should coordinate the States and Tribes to optimize the effectiveness of monitoring investments throughout the region.

State/Tribe/Local: The States estimate their annual spending on monitoring and analysis in the basin at $525,000. They stand ready to review these programs with the federal government to eliminate duplication of effort and maximize the scope of the data gathering and reporting effort.

Sustainability

The philosophy of sustainability overlays all the recommendations developed through the Collaboration process. The positive result of investment in restoration projects can only be maintained over time if sustainable practices become more widespread. Many of the recommendations in the Collaboration's Strategy reflect a sustainable approach.

Federal: In the near term, the Collaboration suggests that federal agencies and the States review their prioritization formulas for brownfield grant and loan programs and for SRF loan programs to determine whether projects that reflect sustainable practices or advance sustainable principles can be awarded a higher priority for funding and/or a more favorable interest rate. In addition, Congress should earmark $50 million in USEPA's brownfield grant program for waterfront brownfields.

State/Tribe/Local: Michigan, Pennsylvania, Ohio and New York have created environmental bond funds that provide hundreds of millions of dollars for brownfield restoration and other sustainable practices.

States, local governments and Tribes have many programs which promote sustainable practices. These activities should continue, and be supplemented over the long term by the sustainable development approach contemplated in the Strategy. For example, local governments should be encouraged to adopt plans for growth that incorporate sustainable practices.

Tribal Overarching Issues

There are 35 federally-recognized Indian Tribal Nations whose reservations are located in the Great Lakes Basin and/or who may retain treaty guaranteed rights to hunt, fish or gather within the Great Lakes Basin in areas ceded to the United States in various treaties. Tribal communities rely upon healthy, fully-functioning Great Lakes ecosystems to meet subsistence, economic, cultural, spiritual and medicinal needs.

The Tribes count upon the United States to honor its treaty obligations and trust responsibilities to adequately fund tribal natural resource and environmental management programs. Tribal environment and natural resource management programs are particularly vulnerable to budgetary reductions. The loss of what might be considered a small amount of funding to others usually constitutes a large percentage of a particular tribal program and results in a correspondingly large reduction in services to tribal communities, if not *de facto* elimination of the program involved.

The Collaboration asks the Administration and Congress to maintain base funding levels for tribal programs to ensure that the Tribes are able to provide for the health and welfare of their communities as well as to remain effective partners in Great Lakes protection and restoration efforts. Such funding should ensure tribal capacity to undertake research and monitoring that takes into account the consumption patterns and risk exposures of tribal members who engage in subsistence life ways, who use natural resources for medicine and in ceremonies, and whose livelihood is based upon natural resources.

Collaboration member Tribes also have identified the prevention and control of invasive species, the reduction and prevention of toxic pollutants (particularly mercury), and habitat protection and restoration as both near term and long term priorities.

STATEMENT OF DAVID J. MILLER, EXECUTIVE DIRECTOR, AUDUBON NEW YORK

My name is David J. Miller, executive director of Audubon New York, and I offer into the hearing record the following testimony in support of Great lakes programs. Audubon New York is the State program of the National Audubon Society, with 50,000 members, 30 local chapters and 8 Audubon Centers and Sanctuaries across the State of New York. Audubon has a long history of Great Lakes conservation in both New York State and the entire Great lakes region. Audubon's mission is to protect birds, wildlife and their habitats through advocacy and education based on sound science. There is no more important body of freshwater than the magnificent Great Lakes-St. Lawrence River Ecosystem.

The Great Lakes-St. Lawrence River system represents nearly twenty per cent of the World's freshwater resources. Its bio-diversity and abundance of wildlife makes it one of the most unique ecological systems in the world. For Audubon, the Great Lakes Basin hosts over a hundred Important Bird Areas, including the State and globally recognized Niagara River, as well as other critical habitats for other wildlife and fisheries. Its links to people are as strong as its ties to the natural world. It has been the backbone of the Nation's early transportation routes to the Mid-West and remains a vital shipping waterway connecting commerce from Duluth to Chicago to Detroit to Cleveland to Buffalo to Montreal. It provides drinking water to tens of millions of American and Canadian citizens and the regional economy has vital manufacturing, agricultural and recreational components all tied to the waters of the Great Lakes.

New York State has the second longest coastline of any Great Lakes State hosting the shores of Lakes Erie and Ontario and rivers of Niagara and St. Lawrence. The Great Lake Basin encompasses close to fifty per cent of New York State's landmass including major population centers such as Buffalo, Rochester and Syracuse. New York has been a leader in Great Lakes policy development and during the past twenty-five years has strongly supported the Great Lakes Charter, the Governors Great Lakes Toxic Substance Control Agreement and the Great Lakes-St. Lawrence River International Water Quality Agreement. The State has also been a strong participant in the International Joint Commission, the Council of Great Lakes Governors, as well as developing the lake-wide Management Plans for Lakes Erie and Ontario. In 1996, New York's Great Lakes twenty-five year plan was launched with 25 million dollars of new funds allocated through its Clean Water, Clean Air Bond Act. Today, New York State is continuing that leadership role with its Government, Academic and Conservation institutions playing a vital role in the development and finalization of the Great lakes Regional Collaborative Strategy and Restoration Plan. Under President Bush's collaborative planning program, New York brought forth its expertise to critical issues facing the Great Lakes including water quality, habitat protection and stewardship, quantitative use of its waters, contaminated harbors and sediments areas as well as the introduction of invasive species to the region. All of these issues and more became components of the Great Lakes Collaborative Strategy and it became clear that they must be addressed if this magnificent and globally significant resource is going to be preserved for future generations.

The Great Lakes Regional Collaborative Strategy sets forth a bold vision for the future of the Great Lakes. It establishes a $20 billion funding goal over the next 5–10 years in order to meet Goals and Milestones in eight Strategic areas. These Strategic Areas include Aquatic Invasive Species, Habitat and Species Management, Coastal Health, Areas of Concern and Contaminated Sediments, Non-Point Pollution programs, Release of Toxic Pollutants, Ecological Indicators and Sustainable Development. These eight specific issue areas are critical to the future of New York State's Great Lakes region, both ecologically and economically.

The Bush administration's response to this bold Strategy released in December of 2005 has been, at best, slow in its development. The President's budget clearly did not set a direction on how a Federal, State and local partnership could be forged to finance a multi-billion program over the next decade. There are bi-partisan legislative proposals in the House and Senate, which if enacted would authorize between $4 and $6 billion from the federal government for this program. However, the President's proposed executive budget provides little to no new investments in Great Lakes programs and gives no indication of how the agencies will build their resource capacity to meet the challenges facing the Great Lakes.

In New York, the response has been significantly different. The State of New York has a dedicated Environmental Protection Fund for open space, habitat, biodiversity, farmland, watershed and other program protection, stewardship and/or restoration projects. In Governor Pataki's executive budget, he proposed expanding this fund to $180 million annually in 2006 with two new categories that could specifically fund projects under the Great Lakes Collaborative Strategy. The two new cat-

egories are Ocean and Great Lakes Initiative and Water Quality Improvement Projects. In addition, the existing categories of open space, habitat restoration, biological diversity and other examples are posed to fund new projects under the Strategy. The legislature and environmental conservation community is now pushing to further expand this fund to $200 million with both Ocean and Great Lakes Initiative and Water Quality Improvement Categories at the $10 million level. This budgetary investment and dedicated funding base can be used to match new federal dollars and help move the Great Lakes Collaborative Strategy with specific projects on the ground.

New York State is blessed with abundant water resources within and beyond the Great Lakes Basin. These areas range from the Atlantic coast to Long Island Sound to the Hudson River to Lake Champlain to the Great Lakes Basin. With this in mind, New York's needs are enormous and the environmental conservation community is rallying behind a 2008 multi billion dollar Clean Water Bond Act proposal. These dollars in addition to existing programs and the growing Environmental Protection Fund will constitute incredible investments by the State of New York for the Great Lakes.

However, it brings us back to the disappointing direction of our federal administration, which is cutting back on these vital programs instead of investing in them. The Great Lakes need a partnership of significant fiscal consideration at all levels of government. The federal government has lead with putting forth a dynamic and collaborative plan, but this effort is all for naught if it cannot be followed by real dollars and investments on a federal level. Washington needs to lead by example and be the catalyst region-wide to get the job done.

Across the Great Lakes, coalitions are building for the restoration of the Lakes. We are proud members of the Heal Our Waters Coalition and are coordinating the legislative work of groups in that coalition in New York State. Audubon is pleased to report that with the efforts of groups such as Environmental Advocates, Great Lakes United, New York Rivers United and Citizen Campaign for the Environment this coalition is expanding and more and more people are getting involved to advocate the Collaborative Strategy and its implementation. In the State Legislature, a coalition of Great Lakes legislators are revitalizing themselves to address issues ranging from Great Lakes Collaborative to the Great Lakes Annex. We are also working closely with our Congressional delegation and we applaud their support and dedication to Great Lakes issues. Now, we must all join forces to truly make this a national priority, for that is what it will take to get the job done. With twenty per cent of the World's freshwater at stake, one wonders how it cannot be one.

Thank you for the opportunity to submit my testimony into the record.

STATEMENT OF FRED V. GRAU, JR., FARMER, STATE COLLEGE, PA

INTRODUCTION

Thank you for the opportunity to submit written testimony to the Committee. To briefly introduce myself, I am a farmer and seed grower whose family history in production agriculture goes back beyond written records if my German ancestors are to be included. I will be the last in this line, in large part to the "native ecosystem" "Invasive Species" agenda. I have been researching the "Invasive Species" agenda since February 1999—the year President Clinton, at Vice President Gore's behest, issued Executive Order (E.O.) No. 13112, "Invasive Species".

"Invasive Species" as defined in the E.O. as well as how the term has been employed by so-called environmental groups and Federal and State bureaucracies, is a bogus agenda. Simplistically, those who endorse "Invasive Species" place all organisms into two categories: native and nonnative. This has not one whit of scientific meaning, and it is grounded in a "natives-good/nonnatives-bad" philosophy—the new paradigm, in the current vernacular. In short, advocates of "Invasive Species" legislation and regulation are adamant in their view that species not present in a given "ecosystem" before European settlement (usually meaning 1492) are harmful, even cataclysmic to that ecosystem. The term "biological pollution" is liberally used as a synonym for "Invasive Species", allowing us a glimpse of their worldview.

My focus will be mainly on this issue, but will also include a few comments about other aspects of the Great Lakes Regional Collaboration Strategy to Restore and Protect the Great Lakes (Strategy). These additional comments will relate to the steady decimation of production agriculture, resource industries and the communities that support them that are due in no small part to misguided environmental policies and regulations. Coming from Pennsylvania, the similarities between the

community-destroying effects of aspects of the Chesapeake Bay Program in my State, and the policies proposed in Strategy are as striking as they are alarming.

REVIEW OF THE STRATEGY'S INTRODUCTION

The case for Strategy Team Recommendations is made in the Introduction. We see here some disturbing inconsistencies in what is meant to be the underlying reasons for the Strategy's Recommendations. The Team uses as its example that of the introduction of the sea lamprey, a poster child for "Invasive Species" research funding, regulation and legislation. The lamprey is tied to both the opening of the St. Lawrence Seaway and the collapse of, to quote Strategy: "the once ubiquitous lake trout—within a few years". There are several factual problems here.

- First, the sea lamprey has been variously reported by universities and government agencies to have been in the Great Lakes system since 1819[1] or 1830[2].
- The Seaway opened in April, 1959—at the minimum, 129 years after the lamprey was introduced to the Great Lakes.
- Massive commercial fishing led to the decline of trout (and other native fish) populations beginning in the 1930's[3].
- Stable trout populations previous to the 1940's were followed by near-collapse in the 1960's, in turn followed by record highs in the 1970's[4].
- Sea lamprey populations are now 10 percent of what they were at their peak in the 1950's, due in large part to known technology and practical application of the lampricide TFM[5]
- Current native perch populations are reported by the USGS to be at their highest levels in more than 30 years. The Wisconsin DNR reports juvenile perch populations to be double that of the previous record year (1989). This follows the near-total ban of commercial perch harvests in the mid-1990's[6].

No one questions the undesirability of the lamprey. What must be questioned are the fundamental reasons exemplified under Strategy's Introduction for the massive funding for further research and highly restrictive regulations presented in Strategy's Recommendations. It is clear that conditions other than the presence of the lamprey have been at work on trout populations for well over a century. It is equally clear that the technology exists for lamprey control, if only the funding were going toward actual control and not further research, Outreach and Education, etc. If this is the case for just one poster species, one must seriously question what faulty logic lies behind the massive funding for other nonnative "invasive" species.

Troubling, too, is the statement that more than 160 exotic species now exist in the Great Lakes. The intent is to imply that this, in itself, is a negative ecological factor. It is not. Among the exotic, "invasive" species found in the Lakes are the various salmon species, brown trout and rainbow trout—hardly detrimental species[7]. The implication that nonnative species are the primary cause of native fish population implosions, when the correlation with overfishing data is high, suggests the need for extreme caution before endorsement of the "Invasive Species" aspects of the Strategy.

From experience in the terrestrial plant arena, the Senate should know that all nonnative species are targets for regulation, as exemplified by A.B. 2631, a California "Invasive Species" bill (mercifully vetoed by Gov. Schwarzenegger) that included even domestic livestock, genetically improved crops, property seizures, and criminal penalties. Since the signing of the E.O., Congress has wisely rejected dangerous "Invasive Species" language in such legislation as Healthy Forests, the Noxious Weed Act, and the recently-passed Transportation Bill. "Economically harmful" or "harmful to human health" are quantifiable, sensible terms. "Invasive Species" is based on a mythical "nativeness", is value-laden, and has no scientific or economic justification whatsoever.

REVIEW OF THE STRATEGY'S RECOMMENDATIONS

Problem Statement. The Problem Statement under Strategy's Recommendations is a continuation of the justifications for "Invasive Species" actions initiated in Strategy's Introduction. Suspicion should arise when such alarmist phrases are used in the text, such as: "wave after wave", "irreversible invasional meltdown" and "cannot

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[1] SGS: http://biology.usgs.gov/s+t/SNT/noframe/gl129.htm
[2] USGS: http://www.glsc.usgs.gov/—files/factsheets/2000-8%20Sea%20Lamprey.pdf
[3] Univ WI—Madison: http://www.wisc.edu/wisconsinpress/books/3053.htm
[4] USGS: http://biology.usgs.gov/s+t/imagefiles/m2130f01.htm
[5] WI Sea Grant: http://www.seagrant.wisc.edu/greatlakesfish/sealamprey.html
[6] USGS/WIDNR: http://www.contracostatimes.com/mld/cctimes/news/nation/14091047.htm
[7] USGS: http://biology.usgs.gov/invasive/Science%20Centers/GreatLakesGLSC.htm

afford even one new invader". The estimate that economic losses from Aquatic Invasive Species (AIS) are at $5 billion per year is certainly suspect, unless one considers Federal and State expenditures for duplicative research, overlapping bureaucracies, grants to non-governmental organizations (NGOs) and the proliferation of manuals, brochures, posters, calendars and videos. This estimate is reminiscent of the "Invasive Species" white paper out of Cornell (1999) that claimed, through estimates of estimates of estimates, that cats cost the U.S. economy $14 billion and that "Invasive Species" overall costs $137 billion[8].

But the most blatantly false statement from Page 17 of Strategy is quoted here: "Moreover, 42 percent of threatened and endangered species in the U.S. are at risk, mainly because of invasive species." How is the Senate to justify Strategy program funding or, incredibly, legislation when the bases for the appeal are misleading and, in this and other cases, patently false?

Goals & Milestones. The salient point under this section is Strategy's full endorsement of all aspects of S. 770, H.R. 1591 and H.R. 1592. These pending bills are legislative versions of this Great Lakes Strategy, but applied to the Nation as a whole. There will not be a discussion of these individual bills here, as the many arguments against dangerous "Invasive Species" legislation dealt with in this testimony apply to them as well. Passage of any of these bills without Congress's full understanding of the unintended consequences is not recommended.

Recommendations. In a brief review of a document as large as the Strategy (70 pages), it is not possible to address every aspect. This includes the many points under Recommendations in Strategy itself as well as those presented in Appendix A. (88 pages). It should be understood that the items selected for discussion here do not connote approval of those that have been left unaddressed.

(1) Ship and Ballast Water. Although there are problems with Strategy's Recommendations, these will not be addressed in the interest of brevity. It is hoped that industry, labor, recreational interests and other parties who will be directly affected will present their view.

(2) Canals and Waterways. As with item 1, above, this will not be discussed, leaving space for the fundamentally more important issues in items 3, 4 and 5.

(3) Listing, Screening and AIS Trade Prevention. Every bullet in this section deserves vigorous, individual rebuttal. The most alarming of these is the incorporation of "whitelisting"—the legal implementation of the Precautionary Principle. This is the antithesis of the very system that has made the United States the envy of the world in agriculture, aquaculture, genetics, and every segment of the "living things" industries, including the American consumer. In Strategy, individuals and commercial interests are forced to do the impossible: prove a negative before they are allowed to trade, either internationally or interstate, in living organisms. By itself, this is the most commerce-killing philosophy one can imagine.

But making Strategy (and S. 770) even more absurd is that the absence of "harm" to be proved is grounded on the value-based (arguably, religious) concept that post-European settlement species are ecological damaging. Taken to its logical conclusion, the proposed recommendation guarantees the failure of any individual or commercial interest to succeed in overcoming the screening process. Most, if not all Federal bureaucracies and NGOs are on record as defining harm by nonnative/"invasive" species as (paraphrased): "replaces native species in the environment"[9]. Often, they use "could" or "may" to preface this phrase.

Although there are disclaimers in the Strategy that not all participating parties have necessarily agreed to all the items, and that no party is bound by these recommendations, it stretches credulity that any commercial interest could have agreed to the items under Strategy Recommendation 3 or S. 770. Not only would international commerce come to a screeching halt, interstate trade of living organisms (including seed) would be disrupted as never before. Even if one assumes good intentions and actions by the bureaucracies, litigation by radical environmental groups is guaranteed.

If the Senate gleans nothing more from this testimony, it is begged to consider the unintended (but guaranteed) consequences of putting American citizens, industry and society as a whole into a U-turn from the policies that have brought us the highest standard of living in history. Codifying the Precautionary Principle is a radical departure from the American experience.

(4) AIS Management Plan. Any plan, when based on flawed philosophy and lack of science, should be questioned. The Strategy's AIS Management Plan fits this description. The four most egregious of the nine points are: (1) voluntary agreements and codes of best practices for industrial trade groups, (2) economic requirements

[8] Cornell University: http://www.news.cornell.edu/releases/Jan99/species—costs.html
[9] NPS: http://www.nps.gov/plants/alien/pubs/index.htm

and incentives, (3) the revolving fund—the proposed de facto tax on (presumably) commercial interests and (most likely) all users of Great Lakes resources, including recreational activities, and (4) the de facto codification of the National Invasive Species Council (NISC).

• Voluntary agreements and codes of best practices are two codes in themselves, albeit with another meaning. The order is usually reversed, as economically disinterested parties write the codes, then, through outcome-prescribed "stakeholder" processes, these parties present to unsuspecting and disunited industry groups what can only be termed an ultimatum: sign on to some form of agreement or be branded anti-environment. This ultimatum works well for the NGOs, who apparently authored much of Strategy. The St. Louis Declaration, unwisely signed by leaders in the nursery and landscape trade, has, in part, resulted in State laws highly detrimental to the trade[10]. The other form of ultimatum is especially effective when industry is presented the choice by Government regulatory agencies, such as the EPA or State "DEPs." We have seen the effectiveness of this technique in Pennsylvania, as production agriculture was forced to "voluntarily" accept (sign off on) several new environmental restrictions because the Federal and State agencies convinced it that "it is going to happen anyway". But most importantly, conduct codes, best management practices, and agreements inevitably become regulation.

• Combining (2) and (3) from the AIS Management Plan above, the Strategy's bullets of "economic requirements and incentives" and "establish a revolving fund" appear to be recommendations for funding for the bureaucracies and NGOs who wrote the Strategy's bullets, all at the expense of industry and resource users. Posting bonds, buying insurance or paying user fees (user fees being unstated in Strategy, but a common practice) will not, as stated in Strategy's Recommendations, "help industry participants". These de facto taxes will only help the grant recipients and their true partners, the expanded bureaucracies. If trade groups agree to these recommendations, it will be a classic case of sanction of the victim.

• Both the NISC and the bogus issue of "Invasive Species" would be strengthened and centralized if Strategy is followed. They will also be forever codified into law if the recommendation for passage of S. 770 is successful. (Environmental NEPA litigators, take note.)

• (5) Outreach and Education. This point might be the most insidious of them all. First, billions of taxpayer dollars have already been spent on "Invasive Species" at the Federal level alone, and for the most part, all there is to show for it are hundreds, if not thousands of slick brochures, calendars, posters, websites, hotel and airline bills, and, significantly, an emboldened, expanded complex of NGOs and bureaucracies who now call for more of the same. My files are overflowing with these items, including a 650-page handbook filled with poetic quotes, predictions of collapsed ecosystems and outright falsehoods. Just one of the blatant falsehoods is the statement that plants such as clover, perennial ryegrass and crownvetch are noxious weeds[11].

There is no lack of funding for bogus "invasive species" Outreach and Education. It is already there in the millions of dollars from existing programs. Visit any facility managed by Federal, State, or sometimes County agencies. You will see posters. You will be given brochures. You can listen to lectures, live or on film. Do a Google search for Aquatic Invasive Species and you will get nearly 3 million entries. Just looking at the first 20 websites you will find dozens of educational resources and links to hundreds more.

But the aspect that is the most disturbing is the indoctrination of K–12 students with "Invasive Species" nonsense at best and the fear-mongering falsehoods at worst. Just one document by the Minnesota Sea Grant, Aquatic Invasive Species: An Educator's Information and Materials Guide[12], lists 12 curricula, 13 posters and print materials, and 7 videos. An ecosystem is not in collapse due to the presence of "nonnative" species. "Invasive Species" are not the cause of species extinction, except in the rarest of circumstances (predators in "island" environments. There is no biological difference between a "native" and "nonnative" species. Nonnative species are no more likely to dominate wetland areas than are native species[13]. Yet, this misinformation is injected into the K–12 curriculum—now with universal regularity.

Several times per semester since about the 4th Grade, I remind my 7th Grade son that he will have to unlearn just about everything he is taught in school about the environment. This was brought home when his 5th Grade class came to the two-

[10] Connecticut:http://search.cga.state.ct.us/dtSearch—lpa.html
[11] FHWA: http://www.fhwa.dot.gov/environment/handbook.htm
[12] MN Sea Grant: http://www.seagrant.umn.edu/exotics/ais—guide.pdf
[13] Sagoff: http://www.propertyrightsresearch.org/2005/articles04/do—invasive—species—threaten—the.htm

page section in its Science textbook that was about "Invasive Species" in everything but name: native vs. nonnative was the theme. It was adorned by a ⅓-page color photo of kudzu, a legally noxious weed that happens to be nonnative. In Pennsylvania, wild grape, Virginia creeper, and poison ivy fill the ecological niches that kudzu occupies in the Old South. But they are noticeably absent from any "Invasive Species" list or discussion—Federal, State or local. Why? Simply because they were here when William Penn received his charter from King Charles II in 1681.

CONCLUSION—"INVASIVE SPECIES"

Concluding my comments on the "Invasive Species" section of the Strategy, there is no doubt that some species cause economic harm or harm to human health. There is equally no doubt that economic and human harms come from species that were both present in North America in 1492 and those that were not. Efforts to control or even eradicate species that meet these criteria are understandable. If the economic/human harms outweigh the benefits, and those harms are severe enough, it is logical to expend resources for control, prevention and even eradication.

However, since the issuance of President Clinton's E.O. in 1999, "Invasive Species" has evolved into an all-pervasive, illogical, and dangerous agenda that has all the hallmarks of previous contentious legislation, such as The Endangered Species Act (ESA). It is both ironic and alarming that while Congress wrestles with reforms of the ESA (H.R. 3824, TESRA), it is at the same time considering implementing the "Invasive Species" sections in the Great Lakes Strategy and the passage of such "Invasive Species" legislation as S. 770, H.R. 1591 and H.R. 1592.

COMMENTS ON REMAINING ITEMS

There are serious concerns about the seven Strategy Team Recommendations that follow the first ("Invasive Species"). As a farmer who is witnessing (note present tense) the destructive effects of the Chesapeake Bay Program (CBP) on rural Pennsylvania, it is fervently hoped that production agriculture, foresters, and other resource interests in the Great Lakes region will carefully read Strategy, investigate how the CBP is steadily eroding Pennsylvania's rural economic base, and then comment themselves on Strategy, S. 770 and other Recommendations. Space does not allow ample development here.

Allowing for just one of many Chesapeake Bay watershed examples (mimicked in Strategy), the one-two punch of the Conservation Reserve Program (CRP) and the Conservation Reserve Enhancement Program (CREP) is having a devastating effect on farmers who actually farm for a living. By taking entire farms out of production (CRP) and with government CREP set-aside payments at four to five times the local land rental rate, financially-strapped retired (or retiring) farmers take land out of production, leaving the active, productive farmers in a dire situation—prohibitively expensive land to rent or even no land at all. The exodus of Pennsylvania dairy cows to ag-friendly States such as Indiana, New Mexico and Texas is at least partially due to CRP, CREP and other ill-advised State, Federal and Regional programs.

One of the baffling inconsistencies of these programs (and Strategy's various Recommendations) can be exemplified by the case of crownvetch and tall fescue in the Chesapeake Bay watershed. They have been indispensable in protecting the Bay watershed for over a half-century—and at little or no maintenance cost. Penngift crownvetch is even the Official State Conservation Plan of Pennsylvania. Empirical data from Penn State University shows water, soil and pesticide loss to be near-zero in corn planted to a crownvetch cover crop under the same conditions (17 inches of rainfall) that resulted in soil loss of 14 tons per acre under conventional tillage[14].

Yet within months of the Executive order, both crownvetch and tall fescue became poster species of most bureaucracies and the NGOs as "Invasive Species", in the process putting enormous pressure on PennDOT and other highway departments to discontinue their use. Inferior, weed-prone (but expensive) species were recommended, even demanded in the case of the FHWA. The Nature Conservancy (TNC), the $4 billion lead NGO on "Invasive Species", even proudly proclaims in a March 2006 bulletin that its influence on State agencies was great enough to stop the Indiana Department of Transportation from using crownvetch[15].

Now, do the people of Indiana, Michigan or any of the Great Lake States want the cleanest water and air that technology and science can produce? Or do they want their State and Federal agencies, in concert with unelected NGOs, to pursue an agenda based on a mythical "nativeness", excluding in the process the most effec-

[14] Penn State University: Crownvetch and No-Tillage Crop Production for Soil Erosion Control, PSU Cooperative Extension Bulletin

[15] TNC: http://www.nature.org/pressroom/press/press1377.html

tive means for clean water and air? Strategy leaves one wondering what the most important goals are. With "Invasive Species" being the first of the eight Strategy subjects addressed, concern is warranted.

This will conclude with two quotes, in case this testimony is viewed as isolated and/or anti-environment:

From noted Biologist and author Stephen Jay Gould, regarding the scientific bogusness of "Invasive Species": "How easy the fallacious transition between a biological argument and political campaign."

From a current USDA researcher (name withheld), in response to a particularly vehement "Invasive Species" lecture given by an FHWA official: "Ma'am, has anyone considered any common sense on this issue?"

Thank you for the opportunity to comment on the Great Lakes Strategy.

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